CCD-TRV30E/TRV50E/TRV70E

RMT-708

SERVICE MANUAL

AEP Model
UK Model
Australian Model
CCD-TRV30E/TRV70E
E Model
Hong Kong Model
CCD-TRV30E/TRV50E/TRV70E
Tourist Model
CCD-TRV30E

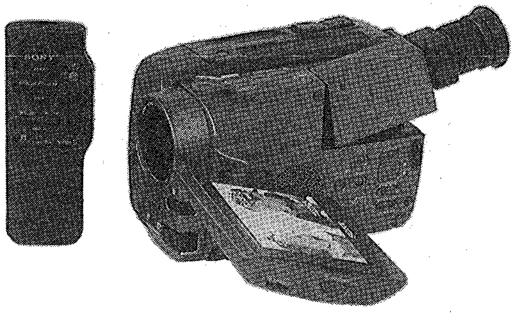


Photo : CCD-TRV50E

Handycam

A MECHANISM

For MECHANISM ADJUSTMENTS, refer to the "8 mm Video MECHANICAL ADJUSTMENT MANUAL IV" (9-973-199-11).

SPECIFICATIONS

Video Camera Recorder

System

Video recording system
Two rotary heads, Helical scanning FM system

Audio recording system
Rotary heads, FM system

Video signal
PAL color, CCIR standards

Usable cassette
See the table.

Tape speed
SP mode: Approx. 20.051 mm (13/16 in)/second
LP mode: Approx. 10.058 mm (13/32 in)/second
LP mode is for playback only. (AEP, UK MODEL)

Recording/Playback time
SP mode: 1 hours and 30 minutes (E5/P5-90)
LP mode: 3 hours (E5/P5-90)
LP mode is for playback only. (AEP, UK MODEL)

Fastforward/rewind time
Approx. 6 min. 30 sec. (E5/P5-90)

Image device
CCD (Charge Coupled Device)

Viewfinder
Electronic viewfinder (monochrome)

Lens
See the table.

Focal distance
See the table.

Color temperature
Auto

Minimum illumination
See the table.

Illumination range
See the table.

Recommended illumination
More than 100 lx

LCD screen

Picture
See the table.

On-screen display
See the table.

Input and Output connectors

S video input/output
See the table.

Video input/output
See the table.

Audio input/output
See the table.

RFU DC OUT
Special minijack, DC 5V

Headphones/earphone jack
See the table.

LANC jack
Stereo mini-minijack (ϕ 2.5 mm)

MIC jack
See the table.

Speaker
Dynamic-speaker

General

Power requirements
On battery mounting surface 6.0V (battery pack), 7.5V (AC power adaptor)

Average power consumption
See the table.

Installation
Vertically, Horizontally

Operating temperature
0 °C to 40 °C (32 °F to 104 °F)

Storage temperature
–20 °C to +60 °C (–4 °F to +140 °F)

Dimensions
See the table.

Mass
See the table.

Microphone
See the table.

— Continued on next page —

8 VIDEO CAMERA RECORDER

CCD-TRV30E/TRV50E

Hi 8 VIDEO CAMERA RECORDER

CCD-TRV70E

SONY®

MICROFILM

	CCD-TRV30E		CCD-TRV50E	CCD-TRV70E		Notes
	AEP/UK	E/AUS/HK/JE	E/HK	AEP/UK	E/AUS/HK	
Usable cassette	8 mm video format cassette (Standard 8 mm)			8 mm video format cassette (Hi8 or standard 8 mm)		
Lens	12× (optical)		24× (digital) 12× (optical)		48× (digital) 12× (optical)	Combined power zoom lens, Filter diameter 37 mm (1 1/2 inches), TTL autofocus system inner focus wide macro system
Focal distance	5.4–64.8 mm (7/32–2 5/8 inches) 39–468 mm (1 9/16–18 1/2 inches)		5.4–64.8 mm (7/32–2 5/8 inches) 6.5–78 mm (9/32–3 1/8 inches) when recording 47–564 mm (1 7/8–22 1/4 inches)			When converted into a 35 mm still camera
Minimum illumination	0.8 lx		4 lx			F1.8
Illumination range	0.8 to 100,000 lx		4 to 100,000 lx			
LCD screen picture	3 inches measured diagonally 59.5×43.2 mm (2 3/8×1 3/4 inches)		4 inches measured diagonally 80.6×58.9 mm (3 1/4×2 3/8 inches)			
On screen display	TN LCD/TFT active matrix method Total dot number: 75,816 (324×234)		TN LCD/TFT active matrix method Total dot number: 112,086 (479×234)			
S video input/output	—			4-pin mini DIN Luminance signal: 1 Vp-p, 75Ω, unbalanced, sync negative Chrominance signal: 0.3 Vp-p, 75Ω, unbalanced Line input is only for monitoring picture from other VCR or TV	4-pin mini DIN Luminance signal: 1 Vp-p, 75Ω, unbalanced, sync negative Chrominance signal: 0.3 Vp-p, 75Ω, unbalanced	
Video input/output	Phono jack, 1 Vp-p, 75Ω, unbalanced, sync negative Line input is only for monitoring picture from other VCR or TV	Phono jack, 1 Vp-p, 75Ω, unbalanced, sync negative		Phono jack, 1 Vp-p, 75Ω, unbalanced, sync negative Line input is only for monitoring picture from other VCR or TV	Phono jack, 1 Vp-p, 75Ω, unbalanced, sync negative	
Audio input/output	Phono jack Input: 327 mV, input impedance 47 kΩ) Output: 327 mV, (at load impedance 47 kΩ), Impedance less than 2.2 kΩ Line input is only for monitoring picture from other VCR or TV	Phono jack Input: 327 mV, input impedance 47 kΩ) Output: 327 mV, (at load impedance 47 kΩ), Impedance less than 2.2 kΩ		Phono jack Input: 327 mV, input impedance 47 kΩ) Output: 327 mV, (at load impedance 47 kΩ), Impedance less than 2.2 kΩ Line input is only for monitoring picture from other VCR or TV	Phono jack Input: 327 mV, input impedance 47 kΩ) Output: 327 mV, (at load impedance 47 kΩ), Impedance less than 2.2 kΩ	
Headphones/ earphone jack	Minijack (ϕ 3.5 mm)		Stereo minijack (ϕ 3.5 mm)			
MIC jack	Minijack 0.388 mV low impedance with 2.5 to 3V DC, output impedance 6.8 kΩ (ϕ 3.5 mm)		Stereo minijack 0.388 mV low impedance with 2.5 to 3V DC, output impedance 6.8 kΩ (ϕ 3.5 mm)			
Average power consumption	7.2W		7.8W	7.9W		
Dimensions	Approx. 121×110×211 mm (w/h/d) (4 7/8×4 3/8×8 3/8 inches)		Approx. 126×110×211 mm (w/h/d) (5×4 3/8×8 3/8 inches)			
Mass	Approx. 1.0 kg (2 lb 4 oz) excluding the battery pack, cassette and shoulder strap Approx. 1.4 kg (3 lb 1 oz) including the battery pack NP-66, lithium battery CR2025, cassette P5-90 and shoulder strap		Approx. 1.2 kg (2 lb 8 oz) excluding the battery pack, lithium battery, cassette and shoulder strap Approx. 1.5 kg (3 lb 5 oz) including the battery pack NP-66, lithium battery CR2025, cassette P5-90 and shoulder strap	Approx. 1.2 kg (2 lb 8 oz) excluding the battery pack, lithium battery, cassette and shoulder strap Approx. 1.5 kg (3 lb 5 oz) including the battery pack NP-66, lithium battery CR2025, cassette E5-90 and shoulder strap		
Microphone	Electret condenser microphone, monaural type		Electret condenser microphone, stereo type			

HK	: Hong Kong model
AUS	: Australian model
JE	: Tourist model

AC power adaptor

Power requirements
110 – 240V AC, 50/60 Hz

Power consumption
18W

Output voltage
DC OUT: 7.5V, 1.8A
Battery charge terminal:
10V, 1.1A in charge mode

Application
Sony battery packs NP-66, NP-90/90D/98/98D, NP-77H/77HD, NP-66H/68, NP-65/67, NP-55H, NP-C65

Operating temperature
0 °C to 40 °C (32 °F to 104 °F)

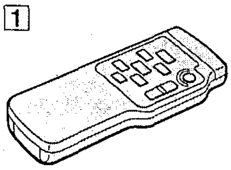
Storage temperature
–20 °C to +60 °C
(–4 °F to +140 °F)

Dimensions
Approx. 103×49×63 mm
(4 1/8×1 15/16×2 1/2 inches)
including projecting parts
and controls

Mass
Approx. 300g (10 oz)

Design and specifications are subject to change without notice.

Supplied Accessories

1


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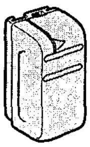

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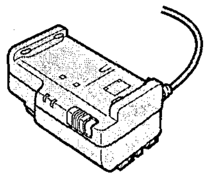

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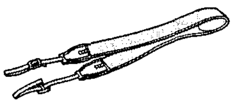

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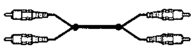

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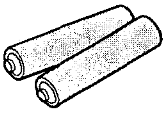

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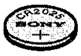

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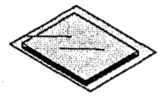

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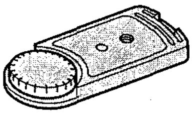

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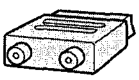

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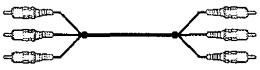

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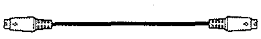

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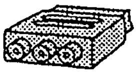


1 **Wireless remote commander (1)**

2 **NP-66 Battery pack (1)**

3 **AC-V26 AC power adaptor (1)**

4 **Shoulder strap (1)**

5 **A/V connecting cable (1)**
(CCD-TRV30E only)

6 **R6 (size AA) Batttery for Remote Commander (2)**

7 **CR2025 Lithium battery (1)**
Already installed in the camcorder.

8 **LCD screen cleaner cloth (1)**

9 **Tripod adaptor (1)**

10 **21-pin adaptor (1)**
(CCD-TRV30E only)

11 **A/V connecting cable (1)**
(CCD-TRV50E/TRV70E only)

12 **S video connecting cable (1)**
(CCD-TRV70E only)

13 **21-pin adaptor (1)**
(CCD-TRV50E/TRV70E only)

Table for difference of functions

Model	TRV30E		TRV40E	TRV50E	TRV60E	TRV70E		
Destination	**AEP/UK**	**E/AUS/ HK/JE**	**E/AUS/HK**	**E/HK**	**AEP/UK**	**AEP/UK**	**AUS**	**E/HK**
LCD	3"	3"	3"	4"	3"	4"	4"	4"
Steady Shot	–	–	○	○	–	○	○	○
Audio	MONO	MONO	MONO	STEREO	STEREO	STEREO	STEREO	STEREO
Line In	○*	○	○	○	–	○*	○	○
Manual Focus	–	–	–	○	–	○	○	○
Zoom	12×	12×	48×	48×	24×	24×	48×	48×
Hi 8	–	–	–	–	○	○	○	○
Wide Mode	–	–	○	○	○	○	○	–
CCD Imager	510	510	760	760	760	760	760	760

- abbreviation

AUS : Australian model
HK : Hong Kong model
JE : Tourist model

* : Monitor input only

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit board Repairing
   - Keep the temperature of the soldering iron around 270°C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

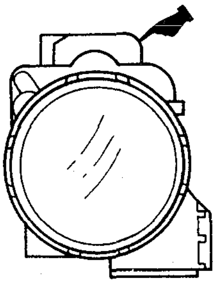
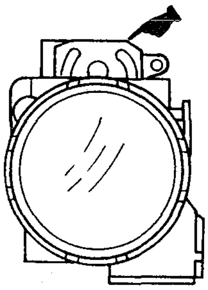
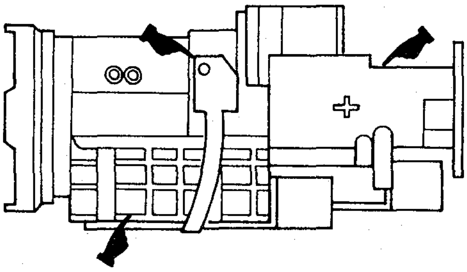
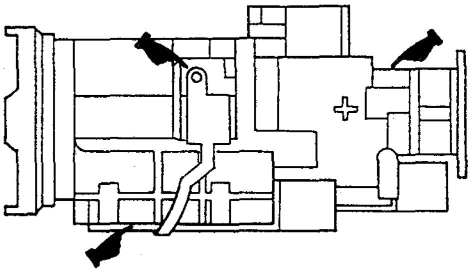
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

[Zoom lens]

This unit employs three types of lens.
Note that the lenses are interchangeable, however their components are not.

Differentiating the lens ☛ : difference point

TYPE I (LSV-140A)	**TYPE II (VCL-5412WA)**
From the front of the lens 	From the front of the lens 
From the right side of the lens (as seen from the front) 	From the right side of the lens (as seen from the front) 

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There is the color reproduction standard frame at the back of the book.

SERVICE NOTE

[ATTACH ADDRESS DISPLAY LOCATION OF ACTUAL SIZE]

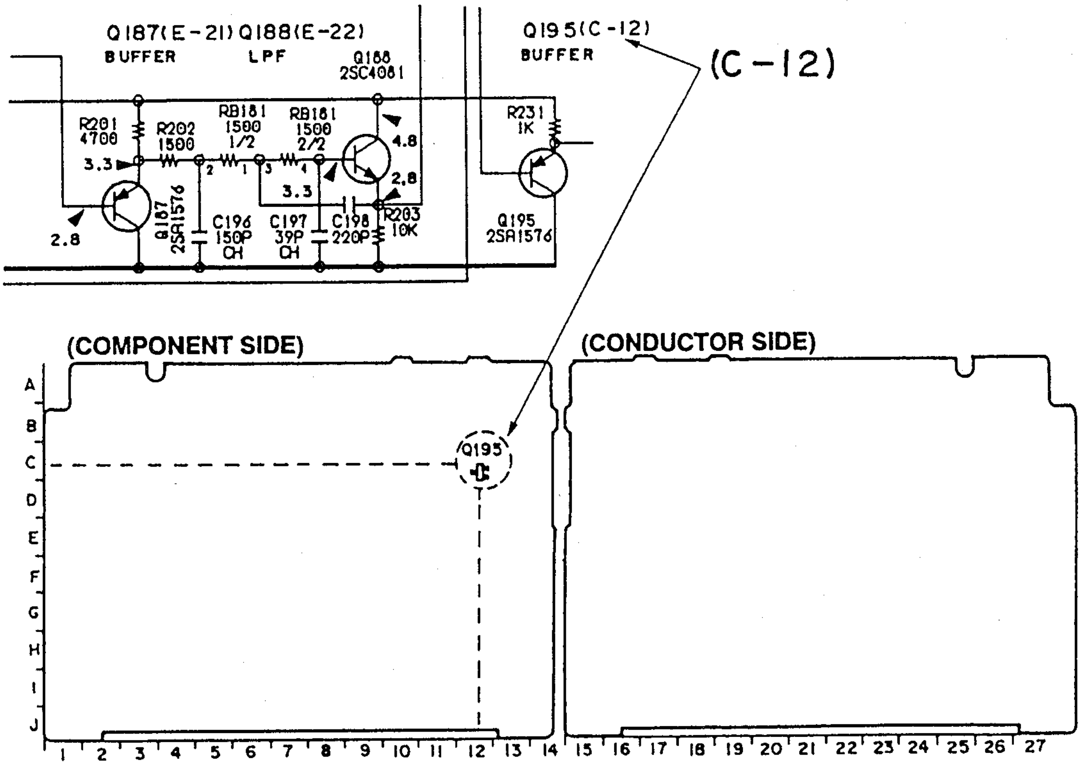
In this manual, the mounted locations of all electrical parts in boards are mentioned in blank space of the printed wiring boards. The location display of actual size is attached under the color reproduction frame at the end of this service manual. It will be available if you take a copy of this to a clear sheet.

[SEMICONDUCTOR LOCATION]

In this service manual, the mounted locations of the semiconductors (IC, transistor, diodes) are indicated in red in schematic diagrams. This enables to find the location on the board easily when servicing.

[PARTS LOCATION DIAGRAM RELATED TO POWER SUPPLY]

The parts location diagram for the power supply which are often checked and replaced when repairing the fuse and IC link and so on. (See page 4–72, 4–82, 4–94 and 4–109.)
This diagram is useful for repair.


Q187(E-21) Q188(E-22)
BUFFER
LPF
Q188
2SC4081
Q195(C-12)
BUFFER
(C-12)
R201
4700
R202
1500
RB181
1500
1/2
RB181
1500
2/2
3.3
2.8
4.8
2,8
3.3
Q187
2SA1576
C196
150P
CH
C197
39P
CH
C198
220P
R203
10K
R231
1K
Q195
2SA1576
(COMPONENT SIDE)
(CONDUCTOR SIDE)
Q195
A
B
C
D
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F
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[HEAD CLEANING]

After an extended period of use the video image may become indistinet or may not appear at all during playback of a tape. The cause of this usually are dirty video heads. For remedy, cleaning of the heads is required.

Check for Head Clogs During Recording

① Use a blank tape, record a short section, then press the stop button to stop.
② Set to recording mode again.
③ If the [⊠] mark is flashing in the viewfinder at this time, head clogs are occurred.

Check During Playback of a Tape

① Play back a pre-recorded tape and display the image on a TV screen.
② If there is no sound and the image is unstable, no image appears on the screen, or tape transport is unstable, head clogs are occurred.

Remedy

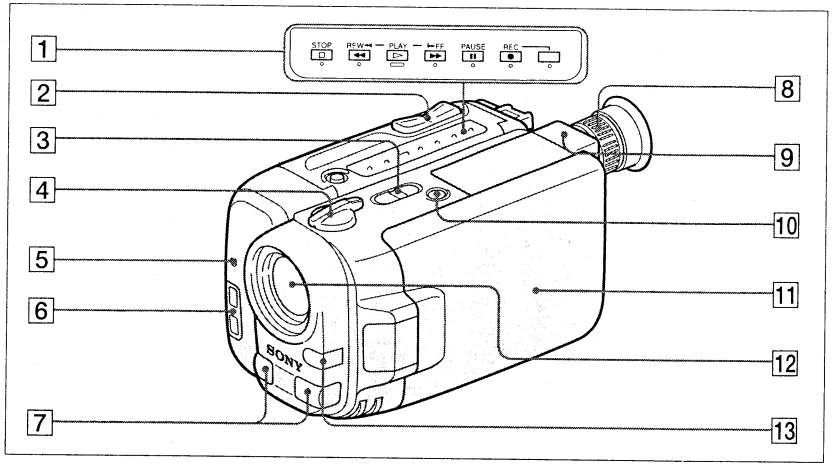
[Cleaning method using a cleaning tape]

- Use the Cleaning Tape. (Please follow the instructions attached to the cleaning tape.)

This section is extracted from instruction manual of CCD-TRV70E (E, AUS, HK model).

Identifying the Parts

Identificación de los componentes



1 Tape transport buttons (p.24, 25)
□ STOP
◀◀ REW (rewind)
▷ PLAY (playback)
▶▶ FF (fast-forward)
❚❚ PAUSE
● REC
These buttons will function in VTR mode.

2 Power zoom button (p.14)

3 EDITSEARCH button (p.22)

4 POWER switch (p.11, 24)

5 Camera recording/battery lamp (p.44)

6 Power zoom button (p.15)
It is useful when recording in low position.

7 Built-in microphone

8 Viewfinder adjustment ring (p.12)

9 Viewfinder (p.12, 64, 84)

10 FADER button (p.38)

11 LCD panel (p.16)

12 Lens cover

13 Remote sensor (p.82)
Aim the Remote Commander here for remote control.

1 Botones de transporte de cinta (p.24, 25)
□ STOP
◀◀ REW (rebobinado)
▷ PLAY (reproducción)
▶▶ FF (avance rápido)
❚❚ PAUSE
● REC
Estos botones funcionarán en el modo VTR.

2 Botón de zoom (p.14)

3 Botón EDITSEARCH (p.22)

4 Conmutador POWER (p.11, 24)

5 Indicador de grabación de cámara/batería (p.44)

6 Botón de zoom (p.15)
Resulta útil para filmar en una posición baja.

7 Micrófono incorporado

8 Rueda de ajuste del visor electrónico (p.12)

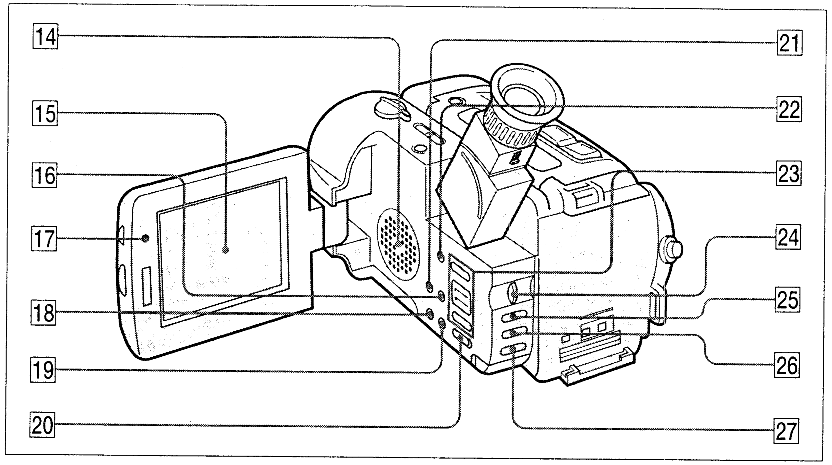
9 Visor electrónico (p.12, 64, 84)

10 Botón FADER (p.38)

11 Panel LCD (p.16)

12 Cubierta del objetivo

13 Sensor remoto (p.82)
Oriente el mando a distancia hacia este punto para control remoto.



14 Speaker

15 LCD screen (p.24, 84)

16 TIME button (p.31)

17 Recording lamp (p.16)

18 DISPLAY button (p.25)

19 END SEARCH button (p.27)

20 STEADY SHOT switch (p.41)

21 COUNTER RESET button (p.13)

22 DATE button (p.31)

23 MENU operation buttons (p.42, 54)

24 VOLUME control (p.24)

25 PICTURE EFFECT button (p.35)

26 PROGRAM AE button (p.33)

27 BACK LIGHT button (p.40)

14 Altavoz

15 Pantalla LCD (p.24, 84)

16 Botón TIME (p.31)

17 Indicador de grabación (p.16)

18 Botón DISPLAY (p.25)

19 Botón END SEARCH (p.27)

20 Selector STEADY SHOT (p.41)

21 Botón COUNTER RESET (p.13)

22 Botón DATE (p.31)

23 Botones de control de menú MENU (p.42, 54)

24 Botón VOLUME (p.24)

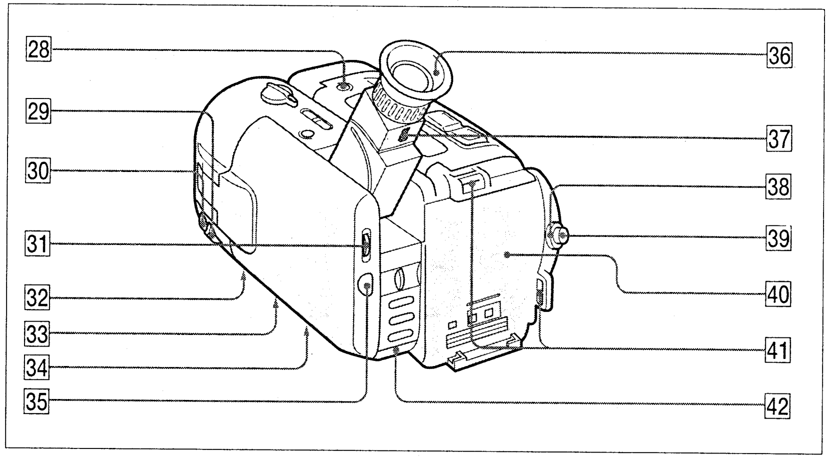
25 Botón PICTURE EFFECT (p.35)

26 Botón PROGRAM AE (p.33)

27 Botón BACK LIGHT (p.40)

Identifying the Parts

Identificación de los componentes



28 **START/STOP button (p.16)**
It is useful when recording in low position.

29 **FOCUS switch (p.37)**

30 **Focus dial (p.37)**

31 **LCD BRIGHT dial (p.16)**

32 **Tripod receptacle (p.20)**
Attach the supplied tripod adaptor so that a tripod (not supplied) can be attached in good balance.

33 **Stand (for recording) (p.20)**

34 **Stand (for playback) (p.25)**

35 **PUSH OPEN button (p.16, 24)**

36 **Eyecup**

37 **RELEASE (viewfinder release) knob (p.64)**

38 **STANDBY switch (p.11)**

39 **START/STOP button (p.11)**

40 **Battery mounting surface (p.9)**

41 **Hooks for shoulder strap (p.80)**

42 **BATT (battery release) knob (p.9)**

28 **Botón START/STOP (p.16)**
Resulta útil para filmar en una posición baja.

29 **Selector FOCUS (p.37)**

30 **Dial de enfoque (p.37)**

31 **Dial LCD BRIGHT (p.16)**

32 **Receptáculo para trípode (p.20)**
Ajuste el adaptador de trípode suministrado, de forma que el trípode (no suministrado) mantenga un buen nivel de equilibrio.

33 **Soporte (para grabación) (p.20)**

34 **Soporte (para reproducción) (p.25)**

35 **Botón PUSH OPEN (p.16, 24)**

36 **Ocular**

37 **Mando RELEASE (liberación del visor electrónico) (p.64)**

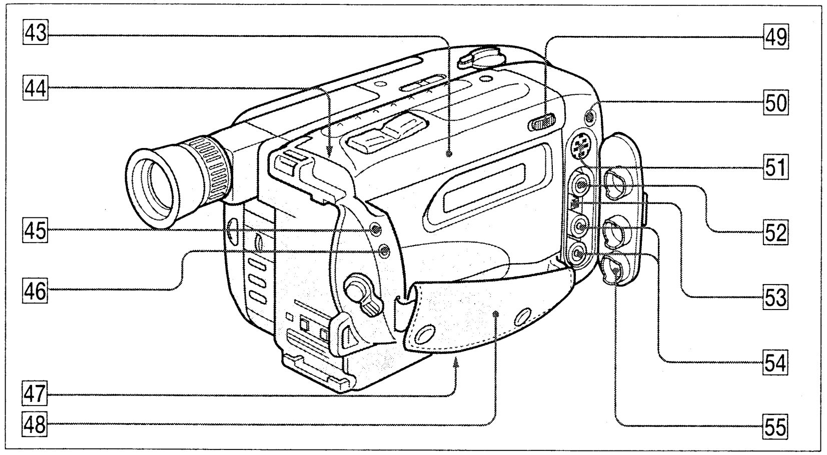
38 **Selector STANDBY (p.11)**

39 **Botón START/STOP (p.11)**

40 **Superficie de montaje de la batería (p.9)**

41 **Ganchos para asa de hombro (p.80)**

42 **Mando BATT (liberación de la batería) (p.9)**



43 **Cassette compartment lid (p.10)**

44 **EJECT button (under the lid) (p.10)**

45 **LANC Ⓛ control jack**
Connect the LANC Ⓛ connecting cable to a wired remote control unit such as an editing controller. In this case, set the COMMANDER mode to OFF in the menu system (p. 43).
Ⓛ stands for Local Application Control Bus system. The Ⓛ control jack is used for controlling the tape transport of video equipment and peripherals connected to it. This jack has the same function as the connectors indicated as CONTROL L or REMOTE.

46 **🎧 (headphones) jack (p.25)**

47 **Lithium battery compartment (p.53)**

48 **Grip strap (p.19)**

49 **Lid release knob (p.10)**

50 **MIC (microphone) jack**
Connect an optional external microphone. This jack also accepts a "plug-in-power" microphone.

51 **S VIDEO jack (p.47, 51)**

52 **VIDEO jack (p.47, 51)**

53 **RFU DC OUT (RFU adaptor DC out) jack**

54 **Audio jacks (p.47, 51)**

55 **Jack cover**

43 **Tapa del compartimiento de cassettes(p.10)**

44 **Botón EJECT (debajo de la tapa) (p.10)**

45 **Toma de control LANC Ⓛ**
Conecte el cable de conexión LANC Ⓛ a una unidad de control remoto con cable, como un controlador de edición. En este caso, asigne al modo COMMANDER la opción OFF en el sistema de menús (p. 43).
Ⓛ significa Local Application Control Bus system (sistema de bus de control de aplicaciones local). La toma de control Ⓛ se emplea para controlar el transporte de cinta del equipo de vídeo y de los dispositivos periféricos conectados a ésta. Esta toma realiza la misma función que los conectores CONTROL L o REMOTE.

46 **Toma 🎧 (auriculares) (p.25)**

47 **Compartimiento de la pila de litio (p.53)**

48 **Correa de la empuñadura (p.19)**

49 **Mando de apertura de la tapa (p.10)**

50 **Toma MIC (micrófono)**
Conecte un micrófono opcional externo. Esta toma también admite un micrófono con enchufe de alimentación.

51 **Toma S VIDEO (p.47, 51)**

52 **Toma VIDEO (p.47, 51)**

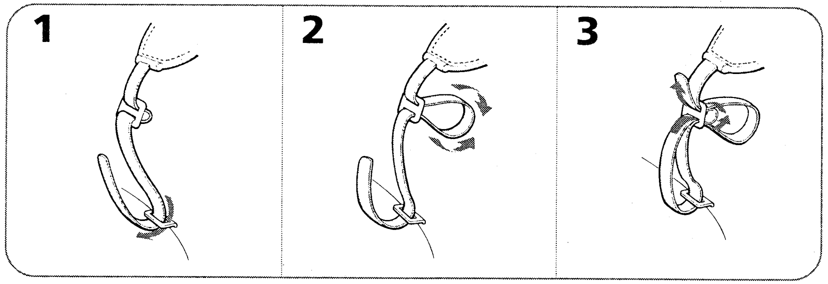
53 **Toma RFU DC OUT (adaptador RFU con salida CC)**

54 **Tomas de audio (p.47, 51)**

55 **Cubierta de tomas**

Attaching the shoulder strap
Attach the supplied shoulder strap to the hooks for the shoulder strap ([41] on page 78).

Ajuste del asa de hombro
Ajuste el asa de hombro suministrada a los ganchos del mismo ([41] en página 78).

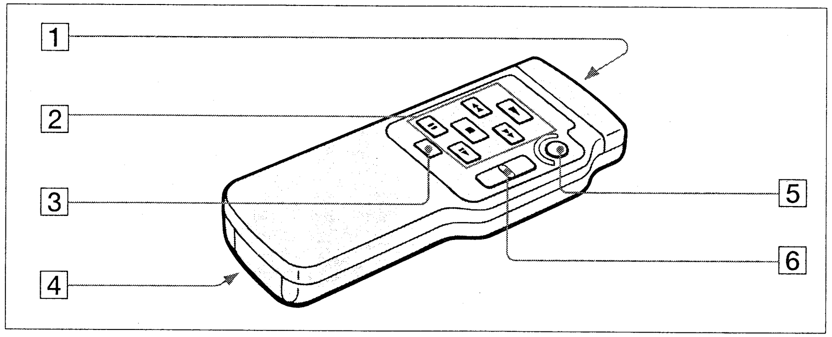


Remote Commander

The buttons that have the same name on the Remote Commander and on the camcorder function identically.

Mando a distancia

Los botones con el mismo nombre en el mando a distancia y en la videocámara funcionan de forma idéntica.



[1] **Transmitter**
Point toward the remote sensor to control the camcorder after turning on the POWER switch on the camcorder.

[2] **Tape transport buttons (p.24, 25)**

[3] **DISPLAY button (p.25)**

[4] **R6 (size AA) battery holder**

[5] **START/STOP button**

[6] **Power zoom button**
The zooming speed is unchangeable on the Remote Commander.

[1] **Transmisor**
Apunte al sensor remoto para controlar la videocámara después de activar el conmutador POWER en la misma.

[2] **Botones de transporte de cinta (p.24, 25)**

[3] **Botón DISPLAY (p.25)**

[4] **Soporte de batería R6 (tamaño AA)**

[5] **Botón START/STOP**

[6] **Botón de zoom**
La velocidad de zoom no puede cambiarse en el mando a distancia.

Preparing the Remote Commander

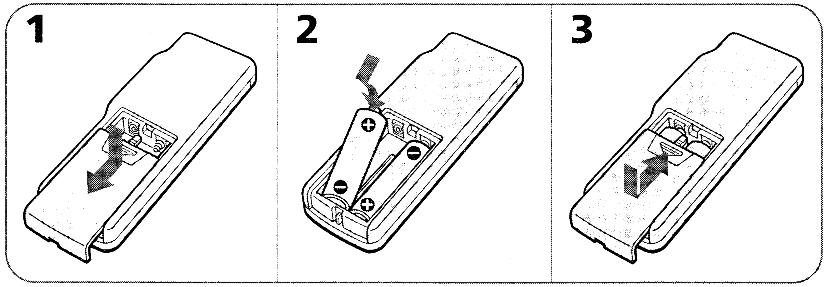
To use the Remote Commander, you must insert two R6 (size AA) batteries. Use the supplied R6 (size AA) batteries.

(1) Remove the battery cover from the Remote Commander.
(2) Insert both of the R6 (size AA) batteries with connect polarity.
(3) Put the battery cover back onto the Remote Commander.

Preparación del mando a distancia

Para utilizar el mando a distancia, es preciso insertar dos pilas R6 (tamaño AA). Utilice las pilas R6 (tamaño AA) suministradas.

(1) Retire la cubierta del compartimiento de pilas del mando a distancia.
(2) Inserte dos pilas R6 (tamaño AA) con la polaridad correcta.
(3) Cierre la cubierta del compartimiento de pilas del mando a distancia.



Note on battery life
The battery for the Remote Commander last about 6 months under normal operation. When the batteries become weak or dead, the Remote Commander does not work.

To avoid damage from possible battery leakage
Remove the batteries when you will not use the Remote Commander for a long time.

Nota sobre la duración de las pilas
Las pilas del mando a distancia duran 6 meses aproximadamente en condiciones normales de uso. Cuando las pilas se debilitan o se agotan, el mando a distancia no funciona.

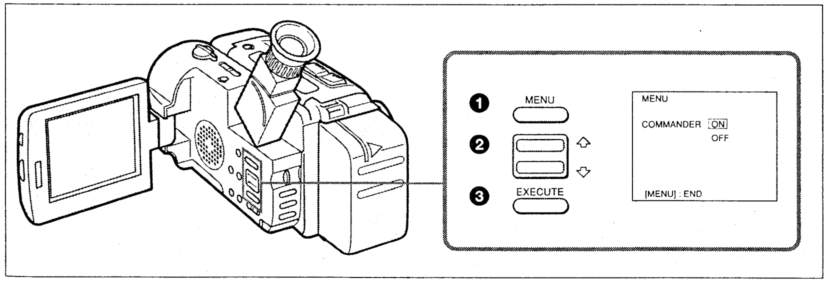
Para evitar daños derivados de posibles fugas de las pilas
Retire las pilas cuando no vaya a utilizar el mando a distancia durante unos días.

Using the Remote Commander

Make sure that the COMMANDER mode is set to ON in the menu system (p.43).

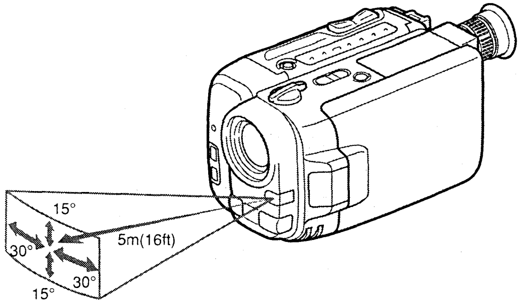
Uso del mando a distancia

Compruebe que el modo COMMANDER está ajustado en la posición ON en el sistema de menús (p.43).



Remote Control Direction

Aim the Remote Commander to the remote sensor within the range as shown below.



Notes on the Remote Commander

- Keep the remote sensor away from strong light sources, such as direct sunlight or illumination. Otherwise, the remote control may not be effective.
- Be sure that there is no obstacle between the remote sensor and the Remote Commander.
- This camcorder works at commander mode VTR 2. The commander mode (1, 2, and 3) are used to distinguish this camcorder from other Sony VCRs to avoid remote control misoperation. If you use another Sony VCR at commander mode VTR 2, we recommend you change the commander mode or cover the remote sensor of the VCR with black paper.

Dirección del control remoto

Dirija el mando a distancia al sensor remoto dentro del margen que se muestra a continuación.

Notas sobre el mando a distancia

- Mantenga alejado el sensor remoto de fuentes de iluminación intensas, como luces directas o la luz directa del sol. De otro modo, es posible que no funcione el control remoto.
- Asegúrese de que no se interponga ningún obstáculo entre el sensor remoto y el mando a distancia.
- Esta videocámara funciona en el modo de mando a distancia VTR 2. El modo de mando a distancia (1, 2 y 3) se utiliza para distinguir la videocámara de otras videograbadoras Sony, con el fin de evitar fallos de funcionamiento del control remoto. Si emplea otra videograbadora Sony en el modo de mando a distancia VTR 2, se recomienda cambiar el modo de mando a distancia o cubrir el sensor remoto de la videograbadora con papel negro.

To Watch the Demonstration

You can watch a brief demonstration of pictures with special effects.
If the demonstration appears when you turn on the camcorder for the first time, exit the Demo mode to use your camcorder.

To enter Demo mode

(1) Remove the cassette and turn the POWER switch to OFF.
(2) Turn STANDBY up.
(3) While holding down ▷, turn the POWER switch to CAMERA. Demonstration starts.

If a cassette is inserted, the demo mode will be cancelled. Note that once you enter demo mode, this mode is retained as long as lithium battery is in place. Therefore demonstration starts automatically 10 minutes later every time you turn the POWER switch to CAMERA or 10 minutes after the cassette has been removed.

To exit Demo mode

(1) Turn the POWER switch to OFF.
(2) Turn STANDBY up.
(3) While holding down □, turn the POWER switch to CAMERA.

Para visualizar la demostración

Es posible visualizar una pequeña demostración de imágenes con efectos especiales.
Si la demostración aparece al activar la videocámara por primera vez, salga del modo de demostración para utilizar la videocámara.

Para introducir el modo de demostración

(1) Extraiga el cassette y ajuste el conmutador POWER en la posición OFF.
(2) Gire STANBY hacia arriba.
(3) Mientras mantiene pulsado ▷, gire el conmutador POWER hasta CAMERA. Se inicia la demostración.

Si hay un cassette insertado, el modo de demostración se cancelará. Tenga en cuenta que una vez que introduzca el modo de demostración, éste permanecerá mientras la pila de litio esté instalada. De esta forma, la demostración se inicia automáticamente 10 segundos después cada vez que ajuste el conmutador POWER en la posición CAMERA, o 10 minutos después de haber extraído el cassette.

Para salir del modo de demostración

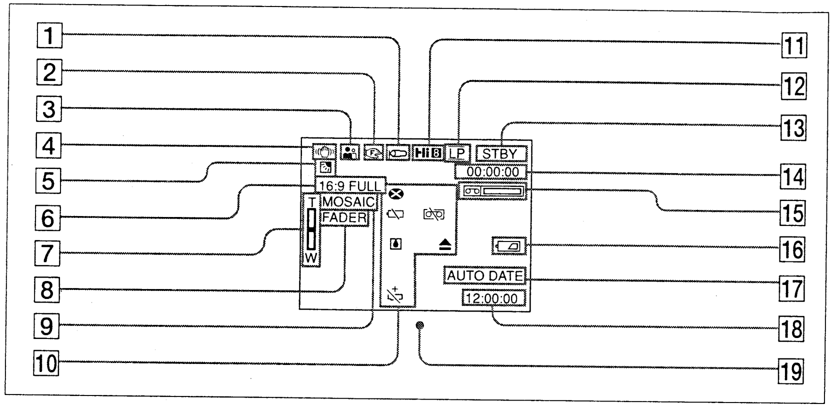
(1) Ajuste el conmutador POWER en la posición OFF.
(2) Gire STANDBY hacia arriba.
(3) Mientras mantiene pulsado □, gire el conmutador POWER hasta CAMERA.

Identifying the Parts

Identificación de los componentes

On the LCD Screen / In the Viewfinder

En la pantalla LCD/en el visor electrónico



1 Wind indicator (p.43)

2 Manual focusing indicator (p.37)

3 PROGRAM AE mode indicator (p.32, 33)

4 Steady Shot indicator (p.41)

5 Back light indicator (p.40)

6 Wide mode indicator (p.45)

7 Power zoom indicator (p.14)

8 FADER indicator (p.38)

9 Picture effect indicator (p.34, 35)

10 Warning indicators (p.86)

11 Playing back or recording in Hi8 format

12 Recording mode (p.56)

13 Tape transport mode (p.11)

14 Tape counter (p.13)

1 Indicador de nivel de viento (p.43)

2 Indicador de enfoque manual (p.37)

3 Indicador de modo PROGRAM AE (p.32, 33)

4 Indicador de estabilización de imagen (Steady Shot) (p.41)

5 Indicador de contraluz (p.40)

6 Indicador de modo de gran angular (p.45)

7 Indicador de zoom (p.14)

8 Indicador FADER (p.38)

9 Indicador de efecto de imagen (p.34, 35)

10 Indicadores de aviso (p.86)

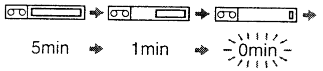
11 Reproducción o grabación en formato Hi8

12 Modo de grabación (p.56)

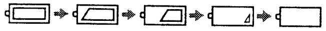
13 Modo de transporte de cinta (p.11)

14 Contador de cinta (p.13)

15 Remaining tape indicator (p.13)



16 Remaining battery indicator (p.58)

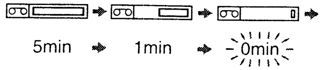


17 AUTO DATE indicator (p.13)

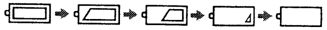
18 Date or Time (p.31)

19 Recording lamp (in the viewfinder) (p.11)

15 Indicador de cinta restante (p.13)



16 Indicador de batería restante (p.58)



17 Indicador AUTO DATE (p.13)

18 Fecha u hora (p.31)

19 Indicador de grabación/indicador de batería (en el visor electrónico) (p.11)

1-5

Warning Indicators

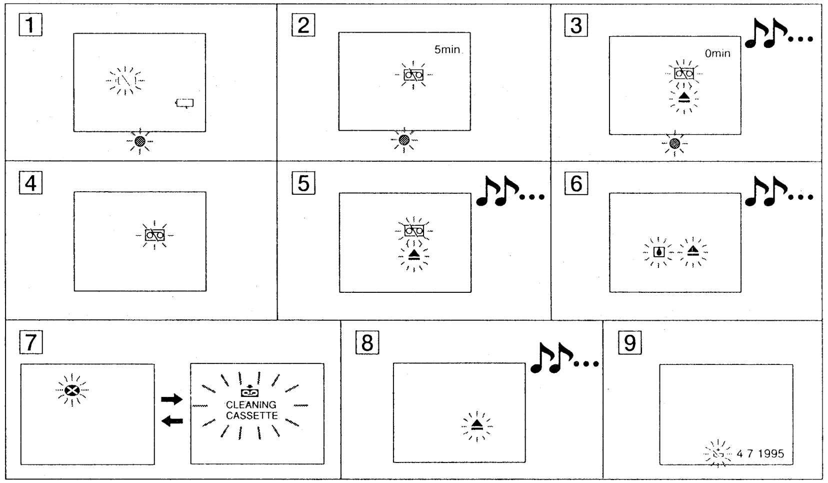
If indicators flash in the viewfinder or a caution lamp on the camcorder flashes, check the following:

♪ : You can hear the beep sound when the BEEP is set to ON. (p.43)

Indicadores de aviso

Si los indicadores del visor electrónico y el indicador de precaución de la videocámara parpadean, compruebe lo siguiente:

♪ : Es posible escuchar el pitido cuando BEEP está ajustado en la posición ON. (p.43)



[1] **Battery Remaining**
Slow flashing: The battery is weak.
Fast flashing: The battery is dead.

[2] **The tape is near the end.**

[3] **The tape has run out.**

[4] **No tape has been inserted.**

[5] **The tab on the tape is out (red). (p.10)**

[6] **Moisture condensation has occurred. (p.62)**

[7] **The video heads may be contaminated. (p.63)**

[8] **Some other trouble has occurred.**
Disconnect the power source and contact your Sony dealer or local authorized facility.

[9] **The lithium battery is weak or the lithium battery is not installed. (p.52)**

[1] **Batería restante**
Parpadeo lento: la batería está débil.
Parpadeo rápido: la batería está agotada.

[2] **La cinta está llegando al final.**

[3] **Se ha terminado la cinta.**

[4] **No se ha insertado ninguna cinta.**

[5] **Se ha retirado la lengüeta de la cinta (rojo) (p.10).**

[6] **Se ha condensado humedad (p.62).**

[7] **Es posible que se hayan contaminado los cabezales de vídeo (p.63).**

[8] **Se ha producido otro problema.**
Desconecte la fuente de alimentación y póngase en contacto con su proveedor Sony más cercano o con el establecimiento autorizado Sony local.

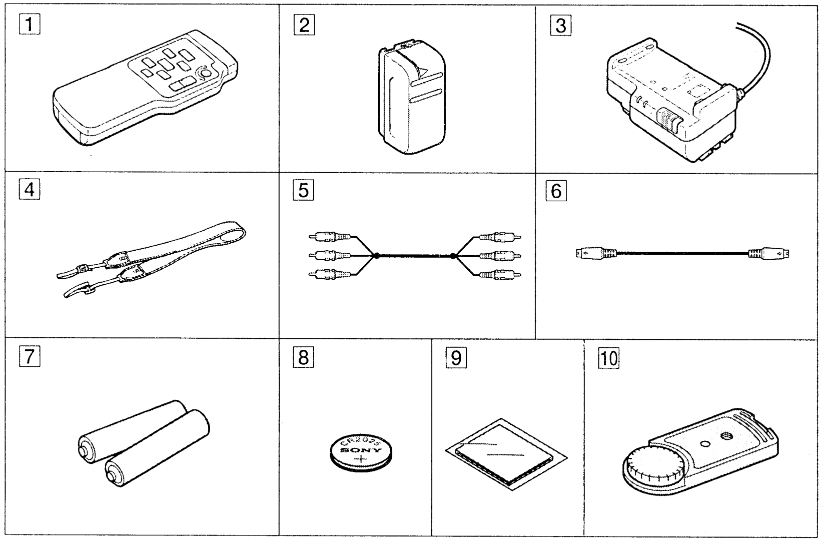
[9] **La pila de litio se ha debilitado o no se ha instalado ninguna pila de litio (p.52)**

Checking Supplied Accessories

Check that the following accessories are supplied with your camcorder.

Comprobación de los accesorios suministrados

Compruebe que se han suministrado los siguientes accesorios con la videocámara.



[1] **Wireless Remote Commander (1) (p.80)**

[2] **NP-66 Battery pack (1) (p.6)**

[3] **AC-V26 AC power adaptor (1) (p.6, 29)**

[4] **Shoulder strap (1) (p.80)**

[5] **A/V connecting cable (1) (p.47)**

[6] **S video connecting cable (1) (p.47)**

[7] **R6 (size AA) Battery for Remote Commander (2) (p.81)**

[8] **CR2025 Lithium battery (1) (p.53)**
Already installed in the camcorder.

[9] **LCD screen cleaner cloth (1) (p.65)**

[10] **Tripod adaptor (1) (p.20)**

[1] **Mando a distancia inalámbrico (1) (p.80)**

[2] **Batería NP-66 (1) (p.6)**

[3] **Adaptador de alimentación de CA AC-V26 (1) (p.6, 29)**

[4] **Asa de hombro (1) (p.80)**

[5] **Cable de conexión de A/V (1) (p.47)**

[6] **Cable de conexión S vídeo (1)(p.47)**

[7] **Pilas R6 (tamaño AA) para el mando a distancia (2) (p.81)**

[8] **Pila de litio CR2025 (1) (p.53)**
Ya instalada en la videocámara.

[9] **Paño de limpieza para pantalla LCD (1) (p.65)**

[10] **Adaptador de trípode (1) (p.20)**

Charging and Installing the Battery Pack

Before using your camcorder, you first need to charge and install the battery pack. To charge the battery pack, use the supplied AC power adaptor.

Charging the Battery Pack

Charge the battery pack on a flat place without vibration.

(1) Connect the AC power adaptor to the mains.
(2) Align the right side of the battery pack with the line on the AC power adaptor, then slide the battery pack in the direction of the arrow.
(3) Set the selector to CHARGE. The CHARGE lamp (orange) lights up. Charging begins.

When charging is completed, the CHARGE lamp goes out. Set the selector to the centre position and unplug the unit from the mains. Then remove the battery pack and install it on the camcorder. To stop charging, set the selector to the centre position.

Carga e instalación de la batería

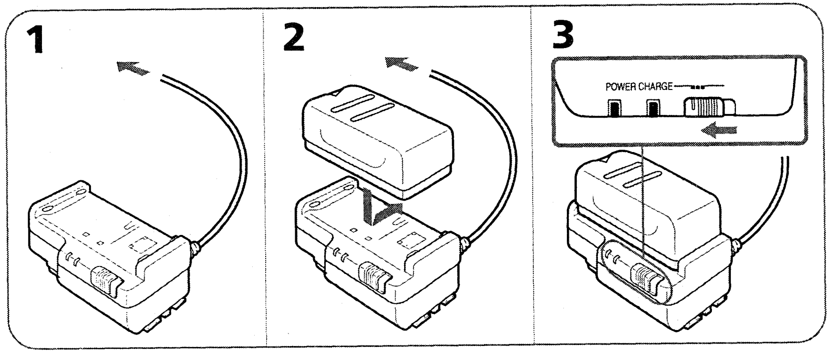
Antes de emplear la videocámara, es necesario en primer lugar cargar e instalar la batería. Para ello, utilice el adaptador de alimentación de CA suministrado.

Carga de la batería

Cárguela sobre una superficie plana sin vibraciones.

(1) Conecte el adaptador de alimentación de CA a la toma de alimentación de red.
(2) Alinee la parte derecha de la batería con la línea del adaptador de alimentación de CA y, a continuación, deslice la batería en la dirección de la flecha.
(3) Ajuste el selector en la posición CHARGE. El indicador CHARGE (naranja) se ilumina, comenzando así la carga.

Cuando la carga finaliza, el indicador CHARGE se apaga. Ajuste el selector en la posición central y desenchufe la unidad de la toma de alimentación de red. A continuación, extraiga la batería e instálela en la videocámara. Para detener la carga, ajuste el selector en la posición central.



Charging Time

Battery pack	Charging time*
NP-66 (supplied)	95
NP-77H/77HD	170
NP-C65	105
NP-55H	85

* Approximate minutes to charge an empty battery pack using the supplied AC power adaptor (Lower temperatures require a longer charging time.)

Battery Life

Battery pack	While recording1)		While playing back on LCD3)
	LCD open2)	LCD close	
NP-66 (supplied)	30 (60)	40 (80)	60
NP-77H/77HD	50 (95)	75 (145)	100
NP-C65	30 (55)	40 (80)	60
NP-55H	20 (40)	35 (65)	40

1) Approximate minutes when recording while you repeat recording start/stop, zooming and turning the power on/off. The actual battery life may be shorter.
Approximate continuous recording time indoors is indicated in parentheses.
2) Approximate minutes when using both the viewfinder and the LCD screen. When using the LCD screen only, the battery life is longer.
3) Approximate continuous playback time indoors.

Tiempo de carga

Batería	Tiempo de carga*
NP-66 (suministrada)	95
NP-77H/77HD	170
NP-C65	105
NP-55H	85

* Minutos aproximados para cargar una batería vacía con el adaptador de alimentación de CA suministrado (A bajas temperaturas es necesario un mayor espacio de tiempo de carga.)

Duración de la batería

Batería	Durante la grabación1)		Durante la reproducción en LCD3)
	LCD abierta2)	LCD cerrada	
NP-66 (suministrada)	30 (60)	40 (80)	60
NP-77H/77HD	50 (95)	75 (145)	100
NP-C65	30 (55)	40 (80)	60
NP-55H	20 (40)	35 (65)	40

1) Minutos aproximados de grabación cuando inicie y detenga la grabación de una forma repetida, utilice el zoom y active/desactive la alimentación. Es posible que la duración real de la batería sea más corta. El tiempo aproximado de grabación continua en interiores se indica entre paréntesis.
2) Minutos aproximados al utilizar el visor electrónico y la pantalla LCD. Si sólo se emplea la pantalla LCD, la duración de la batería será superior.
3) Tiempo aproximado de reproducción continua en interiores.

Charging and Installing the Battery Pack

Carga e instalación de la batería

Important!

Use the battery completely before recharging!

Before you recharge the battery, make sure the battery has been used up (discharged) completely.
Repeated charging while some capacity remains causes a lowering of battery capacity. However, the original battery capacity can be recovered if you use the battery completely and charge it fully again.

To use up the battery, remove the cassette and turn the POWER switch to CAMERA with the battery attached, and leave the camcorder until the ▭ indicator and the red lamp flash rapidly in the viewfinder.

Removing the Battery Pack

Slide the battery pack in the direction of the arrow.

¡Importante!

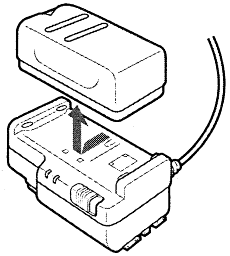
¡Agote por completo la batería antes de volver a cargarla!.

Antes de volver a cargar la batería, asegúrese de que ésta se encuentra completamente agotada (descargada).
Si carga la batería varias veces sin estar completamente agotada, se produce una reducción de su capacidad. No obstante, es posible recuperar la capacidad original si la agota por completo y la vuelve a cargar.

Para descargar la batería, extraiga el cassette y gire el conmutador POWER a la posición CAMERA con la batería fijada, y deje la videocámara hasta que el indicador ▭ y el indicador rojo parpadeen rápidamente en el visor electrónico.

Extracción de la batería

Deslícela en la dirección de la flecha.



Notes on charging the battery pack

- The POWER lamp will remain lit for a while even if the battery pack is removed and the mains lead is unplugged after charging the battery pack. This is normal.
- If the POWER lamp does not light, set the selector to the centre position and disconnect the mains lead. After about one minute, reconnect the mains lead and set the selector to CHARGE again.
- You cannot operate the camcorder using the AC power adaptor while charging the battery pack.

Notas sobre la carga de la batería

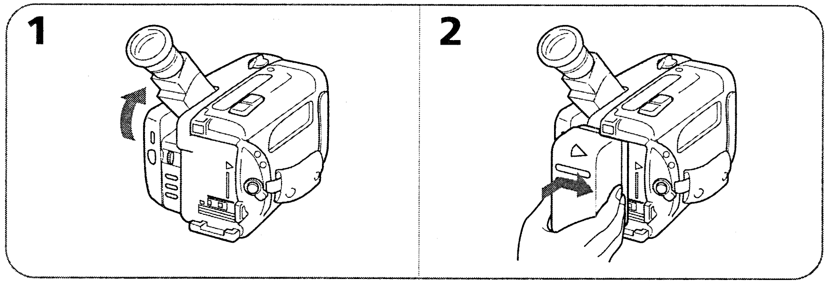
- El indicador POWER permanecerá iluminado durante unos instantes, incluso si ha extraído la batería y ha desenchufado el cable de alimentación después de cargarla. Esto es normal.
- Si el indicador POWER no se ilumina, ajuste el selector en la posición central y desconecte el cable de alimentación. Después de un minuto aproximadamente, vuelva a conectar el cable de alimentación y a ajustar el selector en la posición CHARGE.
- No es posible emplear la videocámara con el adaptador de alimentación de CA mientras carga la batería.

Installing the Battery Pack

(1) Lift up the viewfinder.
(2) Align the right side of the battery pack with white line on the camcorder, and slide the battery pack to the right.

Instalación de la batería

(1) Levante el visor electrónico.
(2) Alinee la parte derecha de la batería con la línea blanca de la videocámara y, a continuación, deslice la batería hacia la derecha.

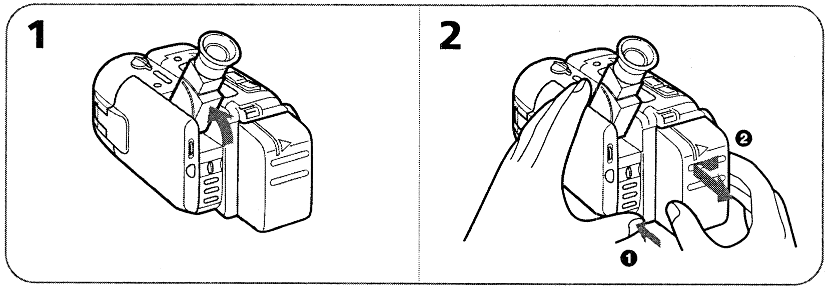


Removing the Battery Pack

(1) Lift up the viewfinder.
(2) While pressing BATT, slide the battery pack to the left.

Extracción de la batería

(1) Levante el visor electrónico.
(2) Mientras pulsa BATT, deslice la batería hacia la izquierda.



Inserting a Cassette

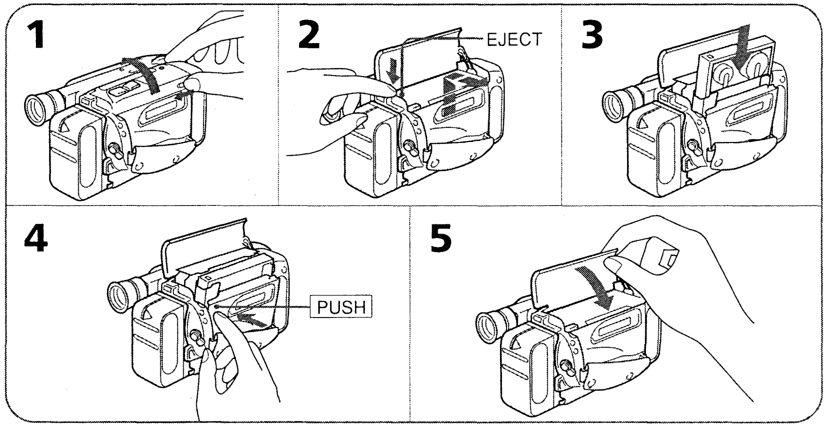
Inserción de un cassette

Make sure that a power source is installed.

(1) While sliding the lid release knob, lift up the lid. Then open it.
(2) Press EJECT. The cassette compartment automatically lifts up and opens.
(3) Insert a cassette (not supplied) with the window facing out.
(4) Press the PUSH mark on the cassette compartment to close it. The cassette compartment automatically goes down.
(5) Close the lid until it locks.

Asegúrese de que ha instalado una fuente de alimentación.

(1) Levante la tapa mientras desliza el mando de apertura y, a continuación, ábrala.
(2) Pulse EJECT. El compartimiento del cassette se levanta y se abre automáticamente.
(3) Inserte un cassette (no suministrado) con la parte transparente hacia fuera.
(4) Presione la marca PUSH del compartimiento del cassette para cerrarlo. Dicho compartimiento baja automáticamente.
(5) Cierre la tapa completamente.



To Eject the Cassette

While sliding the lid release knob in the direction of the arrow, lift up the lid of the cassette holder and press EJECT.

Para expulsar el cassette

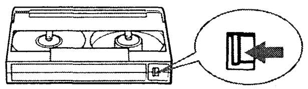
Mientras desliza el mando de apertura de la tapa en la dirección de la flecha, levante la tapa del portacassette y pulse EJECT.

To Prevent Accidental Erasure

To prevent accidental erasure, slide the tab on the cassette to expose the red mark. If you try to record with the red mark exposed, the ⌧ and ⏏ indicators flash in the viewfinder, and you cannot record.
To re-record on this tape, slide the tab back out covering the red mark.

Para prevenir que el cassette se borre accidentalmente

Deslice la lengüeta del cassette para que aparezca la marca roja. No es posible grabar mientras esta marca sea visible y los indicadores ⌧ y ⏏ parpadeen en el visor electrónico.
Para volver a grabar en esta cinta, vuelva a deslizar la lengüeta a su posición anterior de forma que cubra la marca roja.



Camera Recording

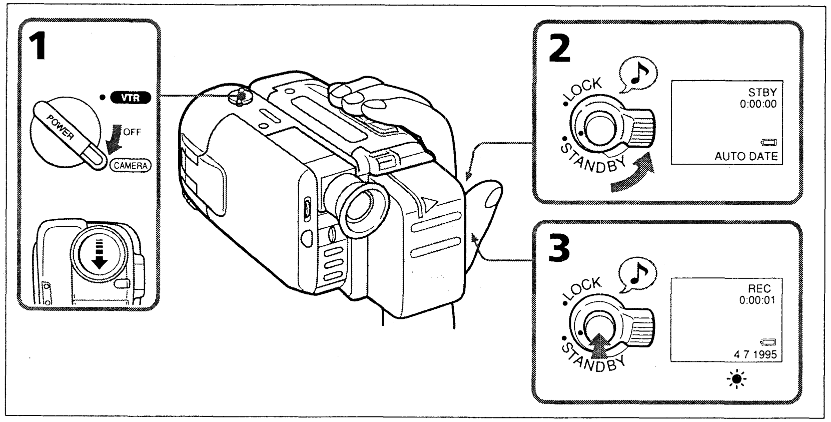
Grabación con la videocámara

Make sure that the power source is installed and a cassette is inserted. The date is automatically recorded for 10 seconds after you start recording (AUTO DATE feature). This feature works only once a day. You can hear the beep sound to confirm your operation.
Before you record one-time events, you may want to make a trial recording to make sure that the camcorder is working correctly.

(1) While pressing the small green button on the POWER switch, turn it to CAMERA.
(2) Turn STANDBY up.
(3) Press START/STOP. The camcorder starts recording and the "REC" indicator appears and the red lamp lights up in the viewfinder. The red lamp on the front also lights up.

Asegúrese de que ha instalado la fuente de alimentación y de que ha insertado una cinta. La fecha se graba automáticamente durante 10 segundos después del inicio de la grabación (función AUTO DATE). Esta función se activa sólo una vez al día. Es posible escuchar el pitido para confirmar la operación.
Antes de grabar acontecimientos únicos, es posible que desee realizar una grabación de prueba para asegurarse de que la videocámara funciona correctamente.

(1) Mientras pulsa el botón verde pequeño del conmutador POWER, gírelo hacia CAMERA.
(2) Gire STANDBY hacia arriba.
(3) Pulse START/STOP. La videocámara inicia la grabación, aparece el indicador "REC" y el indicador rojo se ilumina en el visor electrónico. El indicador rojo situado en la parte frontal también se ilumina.

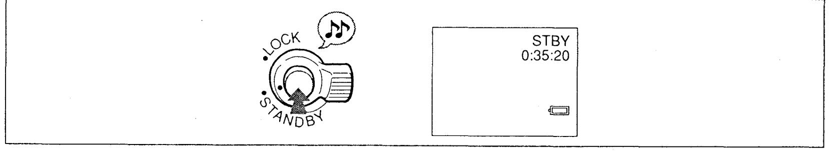


To Stop Recording Momentarily

Press START/STOP again. The "STBY" indicator appears in the viewfinder **(Standby mode)**.

Para detener la grabación momentáneamente

Vuelva a pulsar START/STOP. El indicador "STBY" aparece en el visor electrónico **(Modo en espera)**.



See the next page for further information.

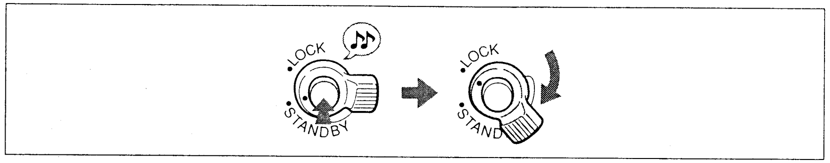
Consulte la página siguiente para obtener más información.

To Finish Recording

Press START/STOP to stop. Turn STANDBY down, and set the POWER switch to OFF. The lens cover closes. Then, eject the cassette (p.10) and remove the battery pack (p.9).

Para finalizar la grabación

Pulse START/STOP para detener la grabación. Gire STANDBY hacia abajo y ajuste el conmutador POWER en la posición OFF. La cubierta del objetivo se cierra. A continuación, expulse el cassette (p.10) y extraiga la batería (p.9).

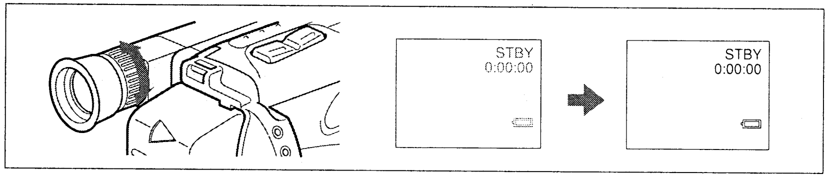


To Focus the Viewfinder Lens

If the viewfinder is not in focus at all or when you use the camcorder after someone else has used it, focus the viewfinder lens. Turn the viewfinder lens adjustment ring so that the indicators in the viewfinder come into sharp focus.

Para enfocar el objetivo del visor electrónico

Si el visor electrónico no está en absoluto enfocado o si utiliza la videocámara después de que otra persona la haya utilizado, enfoque el objetivo del visor electrónico. Gire la rueda de ajuste de objetivo del visor electrónico de forma que los indicadores del visor se enfoquen con nitidez.



Note on Standby mode

If you leave the camcorder for 5 minutes or more with a cassette inserted in Standby mode, the camcorder goes off automatically. This prevents wearing down the battery and wearing out the tape. To resume Standby mode, turn STANDBY down once and turn it up again. To start recording, press START/STOP.

Note on recording

When you record from the beginning of the tape, run the tape for about 15 seconds before starting the actual recording. This will ensure that you won't miss any start-up scenes when you play back the tape.

Nota sobre el modo en espera

Si deja la videocámara durante 5 minutos o más con un cassette insertado en el modo en espera, ésta se desactiva automáticamente. Esto previene el desgaste de la batería y de la cinta. Para reanudar el modo en espera, gire STANDBY hacia abajo una vez y vuelva a girarlo hacia arriba. Para iniciar la grabación, pulse START/STOP.

Nota sobre la grabación

Si graba desde el comienzo de la cinta, aváncela durante 15 segundos aproximadamente antes de iniciar la grabación real. Esto evitará la omisión de las primeras escenas cuando reproduzca la cinta.

Recording mode

This camcorder records in the SP mode (approximately 20.051 mm/second) and in the LP mode (approximately 10.058 mm/second) and can play back in the SP mode and LP mode. The quality of the playback picture in the LP mode, however, will not be as good as that in the SP mode.

Note on the tape counter

The tape counter indicates the recording or playback time. Use it as a guide. There will be a time lag of several seconds from the actual time. To set the counter to zero, press COUNTER RESET located behind the LCD panel. You can know the approximate remaining tape by the remaining tape indicator (p.85).

Note on beep sound

As indicated by the ♪ mark in the illustrations, a beep sounds when you turn the power on or when you start recording and two beeps sound when you stop recording, confirming the operation. Several beeps also sound as a warning of any unusual condition of the camcorder (p.86). Note that the beep sound is not recorded on the tape. If you do not want to hear the beep sound, select "OFF" in the menu system (p.43).

Note on the AUTO DATE feature

The clock is set to Sydney for Australia and New Zealand models, to Tokyo for the models sold in Japan and to Hong Kong for other models at the factory. You can reset the clock (p.54).
You can change the AUTO DATE setting by selecting ON or OFF in the menu system (p.43).
The AUTO DATE feature works once a day. However, the date may automatically appear more than once a day when:

- you reset the date and time.
- you eject and insert the cassette again.
- you stop recording within 10 seconds.
- you set AUTO DATE to OFF once and set to ON in the menu system.

When moving from indoors to outdoors (or vice versa)

Turn STANDBY up and point the camcorder at a white paper for about 15 seconds so that the white balance is properly adjusted.

Modo de grabación

Esta videocámara graba en los modos SP (aproximadamente 20,051 mm/segundo) y LP (aproximadamente 10,058 mm/segundo), e igualmente puede reproducir en ambos modos. Sin embargo, la calidad de la imagen de reproducción en el modo LP no será tan buena como en el modo SP.

Nota sobre el contador de cinta

El contador de cinta indica el tiempo de grabación o de reproducción. Utilícelo como guía. Habrá un intervalo de varios segundos con respecto al tiempo real. Para ajustar el contador a cero, pulse el botón COUNTER RESET situado debajo del panel LCD. Es posible conocer la longitud de cinta restante aproximada mediante el indicador de cinta restante. (p.85).

Nota sobre los pitidos

Como indica la marca ♪ en las ilustraciones, se oye un pitido al activar la alimentación o al iniciar la grabación, y dos pitidos al detener la grabación, confirmando la operación. Asimismo, se oyen varios pitidos como aviso de cualquier condición anormal de la videocámara. (p.86). Tenga en cuenta que los pitidos no se graban en la cinta. Si no desea oírlos, seleccione "OFF" en el sistema de menús. (p.43).

Nota sobre la función AUTO DATE

El reloj está ajustado de fábrica a la hora de Sidney para Australia y Nueva Zelanda, a la de Tokio para los modelos comercializados en Japón, y a la hora de Hong Kong para otros modelos. Si lo desea, puede volver a ajustarlo. (p.54).
Es posible cambiar el ajuste AUTO DATE mediante la selección de ON u OFF en el sistema de menús (p.43).
La función AUTO DATE se activa una vez al día. Sin embargo, es posible que la fecha aparezca automáticamente más de una vez al día, si:

- vuelve a ajustar la fecha y la hora.
- expulsa y vuelve a insertar el cassette.
- detiene la grabación en un espacio de tiempo de 10 segundos.
- ajusta AUTO DATE en la posición OFF una vez y lo ajusta en ON en el sistema de menús.

Al desplazarse del interior al exterior (o viceversa)

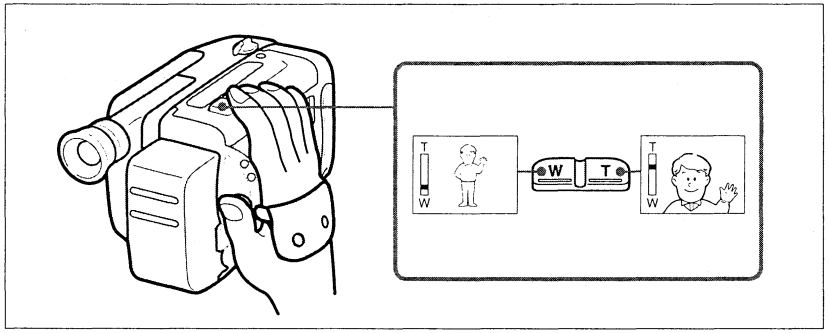
Gire STANDBY hacia arriba y oriente la videocámara hacia un objeto blanco durante 15 segundos aproximadamente para que el balance de blanco se ajuste correctamente.

Using the Zoom Feature

Zooming is a recording technique that lets you change the size of the subject in the scene.
For more professional-looking recordings, use the zoom sparingly.
"T" side: for telephoto (subject appears closer)
"W" side: for wide-angle (subject appears farther away)

Uso de la función de zoom

El uso del zoom es una técnica de grabación que permite cambiar el tamaño del objeto de la escena.
Para realizar grabaciones más profesionales, utilice el zoom con moderación.
Lado "T": para telefoto (el objeto aparece más cerca)
Lado "W": para gran angular (el objeto aparece más lejos)



Zooming Speed (Dual speed zooming)

Press the power zoom button firmly for a high-speed zoom; press it softly for a relatively slow zoom.

Velocidad de zoom (Zoom de doble velocidad)

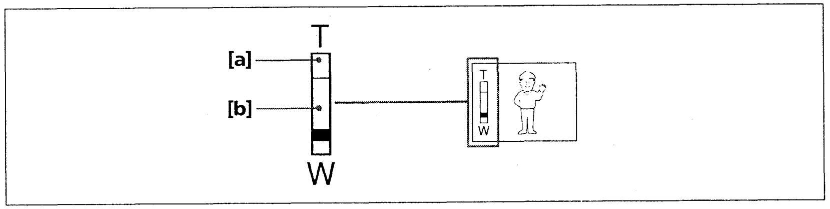
Si desea un zoom de alta velocidad, pulse el botón de zoom con firmeza; púlselo ligeramente si desea un zoom relativamente lento.

Notes on digital zoom

- More than 12 x zoom is performed digitally, and the picture quality deteriorates as you go toward the T side. If you do not want to use the digital zoom, set the D ZOOM function to OFF in the menu system (p. 43).
- The horizontal bar in the power zoom indicator separates the digital zooming zone (above the bar **[a]**) and the optical zooming zone (under the bar **[b]**). If you set the D ZOOM function to OFF, the part above the bar disappears.

Notas sobre el zoom digital

- El nivel de zoom superior a 12 x se realiza digitalmente y la calidad de la imagen se deteriora a medida que se avanza hacia el lado T. Si no desea utilizar el zoom digital, seleccione la opción OFF para la función D ZOOM en el sistema de menús (p. 43).
- La barra horizontal del indicador de zoom separa la zona de zoom digital (por encima de la barra **[a]**) de la zona de zoom óptico (por debajo de la barra **[b]**). Si selecciona OFF para la función D ZOOM, la parte superior desaparece.



When you shoot a subject using a telephoto zoom

If you cannot get a sharp focus while in extreme telephoto zoom, press the "W" side of the power zoom button until the focus is sharp. You can shoot a subject that is at least 1 m (about 3.3 feet) away from the lens surface in the telephoto position, or about 1 cm (about 1/2 inches) in the wide-angle position.

Cuando filme un objeto con zoom telefoto

Si no obtiene un enfoque nítido en la posición de zoom telefoto de máximo alcance, pulse el lado "W" del botón de alimentación de zoom hasta obtener un enfoque nítido. Es posible filmar un objeto que se encuentre a una distancia de al menos 1 m. de la superficie del objetivo en la posición de telefoto, o de 1 cm. aproximadamente en la posición de gran angular.

Shooting with the LCD Screen

You can also record the picture while looking at the LCD screen.
You cannot monitor the sound from the speaker during recording.

(1) While pressing PUSH OPEN, open the LCD panel.

(2) Adjust the angle of the LCD panel.
The LCD panel moves about 90 degrees to this side and about 210 degrees to the other side.
To adjust the brightness of the LCD screen, turn the BRIGHT dial.

There is the recording lamp on the left of the LCD panel.

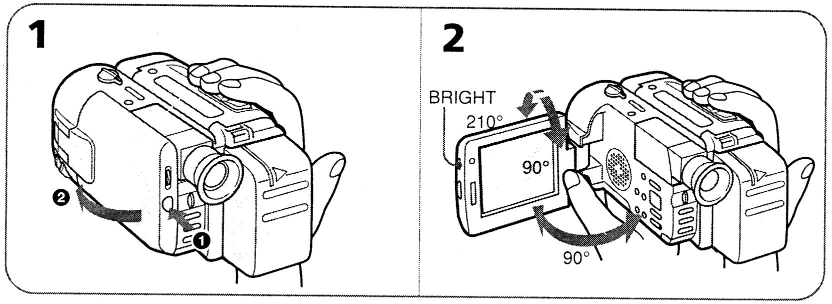
Filmación con la pantalla LCD

También es posible grabar la imagen mientras mira a la pantalla LCD.
No es posible controlar el sonido del altavoz durante la grabación.

(1) Mientras pulsa PUSH OPEN, abra el panel LCD.

(2) Ajuste el ángulo del panel LCD. El panel LCD se desplaza aproximadamente 90 grados hacia este lado y aproximadamente 210 grados al lado contrario.
Para ajustar el brillo de la pantalla LCD, gire el dial BRIGHT.

El indicador de grabación se encuentra en la parte izquierda del panel LCD.

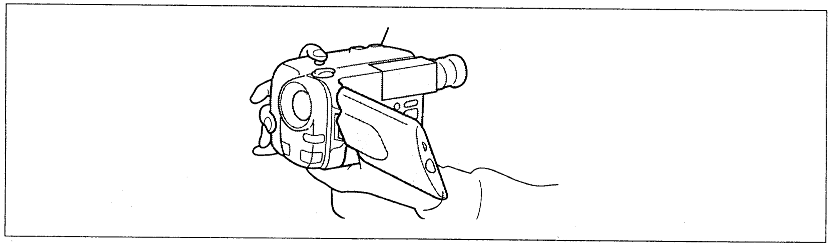


The battery life is longer when the LCD panel is closed. Use the viewfinder instead of the LCD screen to save the battery power.

While recording in a low position using the LCD panel, it is convenient to use the power zoom button located on the front panel (only for slow zoom) and the START/STOP button located on the right top.

La duración de la pila es mayor si se cierra el panel LCD. Utilice el visor electrónico en lugar de la pantalla LCD para ahorrar pilas.

Si realiza la filmación en una posición baja y utiliza el panel LCD, se recomienda emplear el botón de zoom situado en el panel frontal (sólo para zoom lento) y el botón START/STOP situado en la parte superior derecha.

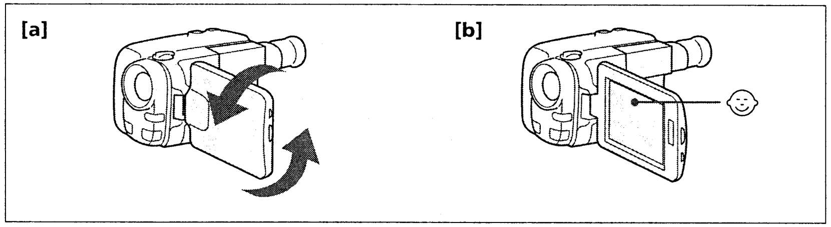


Letting the Subject Monitor the Shot

You can turn the LCD panel over so that it faces the other way.
When the LCD is turned over in CAMERA mode, you can see yourself just as you see yourself in the mirror **(mirror mode)**.
Turn the LCD panel vertically until it clicks first, then turn it over. **[a]**
The ☺ indicator appears on the LCD screen and the date, remaining battery and remaining tape indicator disappear. **[b]**

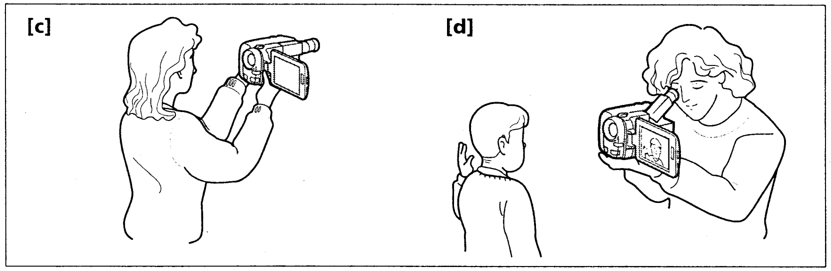
Deje que el objeto controle la filmación

Es posible girar completamente el panel LCD de forma que se oriente hacia el otro lado.
Si gira completamente el panel LCD en el modo CAMERA, podrá verse como si estuviera delante de un espejo (**modo de espejo**).
Gire el panel LCD verticalmente hasta que se oiga un clic y, a continuación, gírelo completamente. **[a]**
El indicador ☺ aparece en la pantalla LCD y la fecha y el indicador de batería y cinta restante desaoareceb. **[b]**



Using the mirror mode, you can record yourself while watching yourself on the LCD. **[c]**
While recording in the mirror mode, you can also use the viewfinder so that you can record a person while letting him/her monitor the shot. **[d]**

Cuando emplee el modo de espejo, podrá grabarse a sí mismo mientras mira en la pantalla LCD. **[c]**
Asimismo, en este modo podrá utilizar el visor electrónico para filmar a sus amigos y dejar que ellos controlen la filmación. **[d]**



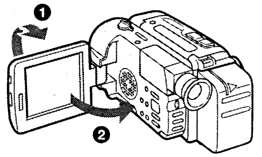
Notes on the LCD panel

- When the LCD panel is turned over,
  - only the POWER switch, the START/STOP button, the power zoom button, the STANDBY switch, the EDITSEARCH button and EJECT button work.
  - the date appears reversely when the AUTO DATE feature is turned on. When recorded it will be normal.
  - the STBY indicator appears as ●II and REC as ●.
- When closing the LCD panel, turn it vertically until it clicks. **[a]**
- When turning the LCD panel, turn it always vertically; otherwise, the camcorder body may be damaged or the LCD panel may not close properly. **[b]**
- Close the LCD panel completely when not in use.

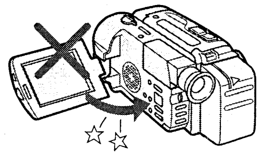
Notas sobre el panel LCD

- Cuando le haya dado la vuelta al panel LCD,
  - sólo funcionarán el conmutador POWER, el botón START/STOP, el botón de zoom, y el conmutador STANDBY, el botón EDITSEARCH y el botón EJECT.
  - la fecha aparece invertida al activar la función AUTO DATE. Una vez grabada, aparecerá normal.
  - el indicador STBY aparece como ●II, y REC como ●.
- Al cerrar el panel LCD, gírelo verticalmente hasta que se oiga un clic. **[a]**
- Cuando gire el panel LCD, hágalo siempre en sentido vertical; de otro modo, pueden dañarse el cuerpo de la videocámara, o es posible que el panel LCD no cierre correctamente. **[b]**
- Cierre el panel LCD completamente cuando no lo utilice.

[a]



[b]

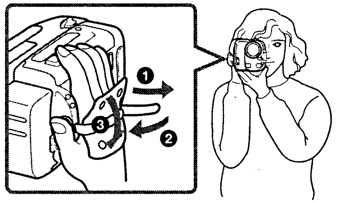


Hints for Better Shooting

Consejos para realizar filmaciones óptimas

For hand-held shots, you'll get better results by holding the camcorder according to the following suggestions.

- Hold the camcorder firmly and secure it with the grip strap so that you can easily manipulate the controls with your thumb.

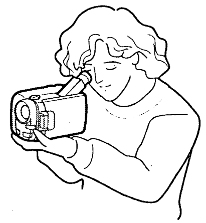


- Place your right elbow against your side.
- Place your left hand under the camcorder to support it.
- Place your eye firmly against the viewfinder eyecup.
- Use the viewfinder frame as a guide to determine the horizontal plane.
- You can record in a low position to get an interesting recording angle. Lift the viewfinder up for recording from a low position. (You can turn it up to about 80 degrees.) **[a]**
- You can also record in a low position or even in a high position using the LCD panel. **[b]**

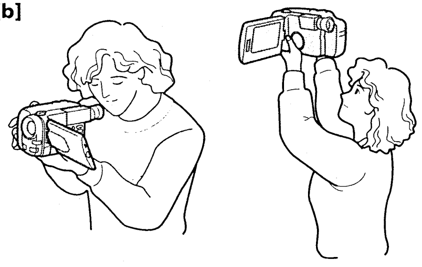
Cuando filme sujetando la videocámara con la mano, conseguirá mejores resultados si sigue las siguientes sugerencias.

- Sujete la videocámara con firmeza y asegúrela con la correa de la empuñadura de forma que sea posible manipular fácilmente los controles con el dedo pulgar.
- Sitúe el codo derecho contra el costado.
- Sitúe la mano izquierda debajo de la videocámara para sujetarla.
- Sitúe el ojo firmemente contra el ocular del visor electrónico.
- Utilice el cuadro del visor electrónico como guía para determinar el plano horizontal.
- Es posible grabar en una posición baja para obtener un ángulo de grabación interesante. Levante el visor electrónico para grabar desde una posición baja. (Es posible levantarlo hasta aproximadamente 80 grados.) **[a]**
- También es posible grabar en una posición baja, o incluso en una alta, utilizando el panel LCD. **[b]**

[a]



[b]



Hints for Better Shooting

Place the camcorder on a flat surface or use a tripod

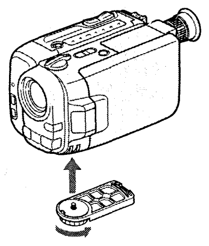
Try placing the camcorder on a table top or any other flat surface of suitable height. If you have a tripod for a still camera, you can also use it with the camcorder.
If the camcorder is difficult to balance on a tripod, use the supplied adaptor. You can attach a tripod to the adaptor. **[c]**
Do not leave the tripod adaptor on the camcorder if the camcorder is not mounted on a tripod.
When attaching a non-Sony tripod, make sure that the length of the tripod screw is less than 6.5 mm (9/32 in). Otherwise, the screw may damage the inner parts of the camcorder.
You can use the stand on the bottom to place the camcorder on a table when recording in a low position. **[d]**

Consejos para realizar filmaciones óptimas

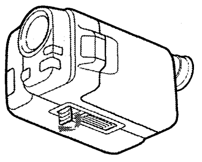
Coloque la videocámara sobre una superficie plana o utilice un trípode

Coloque la videocámara sobre una mesa o sobre cualquier otra superficie plana de altura adecuada.
Si dispone de una trípode para una cámara fija, puede igualmente utilizarlo con la videocámara.
Si resulta difícil equilibrar la videocámara sobre un trípode, utilice el adaptador suministrado. **[c]**
No deje el adaptador de trípode fijado a la videocámara si ésta no está montada sobre un trípode.
Cuando fije un trípode que no sea Sony, compruebe que la longitud del tornillo de trípode sea inferior a 6,5 mm. De lo contrario, es posible que el tornillo dañe los componentes internos de la videocámara.
Es posible utilizar el soporte de la parte inferior para colocar la videocámara sobre una mesa al grabvar en una posición baja. **[d]**

[c]



[d]



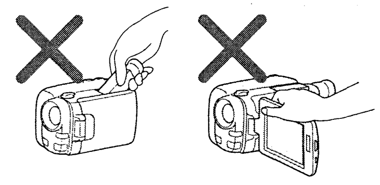
Cautions on the viewfinder and the LCD

- Do not pick up the camcorder by the viewfinder or by the LCD panel. **[e]**
- Do not place the camcorder so as to point the viewfinder or the LCD screen toward the sun. The inside of the viewfinder or the LCD panel may be deformed. Be careful when placing the camcorder under sunlight or by the window. **[f]**

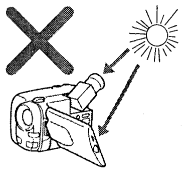
Precauciones sobre el visor electrónico y el panel LCD

- No coja la videocámara por el visor ni por el panel LCD. **[e]**
- No coloque la videocámara de forma que el visor o la pantalla LCD queden orientados hacia el sol, ya que es posible que el interior del visor o el panel LCD se deformen. Tenga cuidado al colocar la videocámara bajo la luz solar o en una ventana. **[f]**

[e]



[f]



Checking the Recorded Picture

The EDITSEARCH function is used to view the recorded picture for a moment during recording. Using EDITSEARCH, you can review the last recorded scene or check the recorded picture on the LCD screen. You can also review the picture in the viewfinder.

(1) While pressing the small green button on the POWER switch, turn it to CAMERA.

(2) Turn STANDBY up.

(3) Press the – (⊜) side of EDITSEARCH momentarily; the last few seconds of the recorded portion plays back. You can also monitor the sound. **(Rec Review)**
Hold down the – side of EDITSEARCH until the camcorder goes back to the scene you want. The last recorded portion is played back. To go forward, hold down the + side. **(Editsearch)**

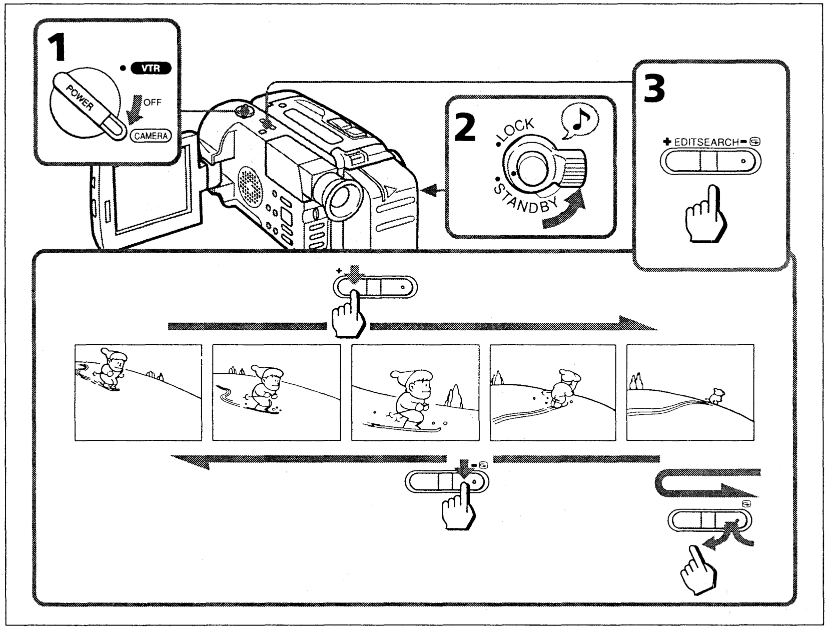
Comprobación de la imagen grabada

La función EDITSEARCH se utiliza para visualizar momentáneamente imágenes grabadas durante la grabación.
Mediante la función EDITSEARCH, es posible visualizar la última escena grabada o comprobar la imagen grabada en el visor electrónico. Asimismo, es posible visualizar la imagen en la pantalla LCD.

(1) Mientras pulsa el botón verde pequeño del conmutador POWER, deslícelo a la posición CAMERA.

(2) Gire STANDBY hacia arriba.

(3) Pulse el lado – (⊜) de EDITSEARCH durante un instante; se reproducen los últimos segundos de la parte grabada. **(Revisión de grabación)**
Mantenga pulsado el lado – de EDITSEARCH hasta que la videocámara vuelva a la escena que desee. Se reproduce la última parte grabada. Para avanzar hacia delante, mantenga pulsado el lado +. **(Búsqueda de edición)**



To Stop Playback

Release EDITSEARCH.

To Begin Re-recording

Press START/STOP. Re-recording begins from the point you released EDITSEARCH. Provided you do not eject the cassette, the transition between the last scene you recorded and the next scene you record will be smooth.

Para detener la reproducción

Libere EDITSEARCH.

Para volver a iniciar la grabación

Pulse START/STOP. La grabación comienza desde el punto en el que liberó EDITSEARCH. Siempre que no expulse el cassette, la transición entre la última escena grabada y la siguiente que grabe será uniforme.

Playing Back a Tape

You can monitor the playback picture on the LCD screen.

(1) While pressing the small green button on the POWER switch, turn it to VTR.
The operation keys light on.

(2) Insert the recorded tape with the window facing out.

(3) While pressing PUSH OPEN, open the LCD panel. Adjust the angle of the LCD panel or the brightness of the LCD screen if necessary. (p.16).

(4) Press ▷ to start playback.

(5) Adjust the volume using VOLUME.

You can also monitor the picture on a TV screen, after connecting the camcorder to a TV or VCR (p.47).

Reproducción de una cinta

Es posible controlar la imagen de reproducción en la pantalla LCD.

(1) Mientras pulsa el botón verde pequeño del conmutador POWER, deslícelo a la posición VTR.
Los botones de control se iluminan.

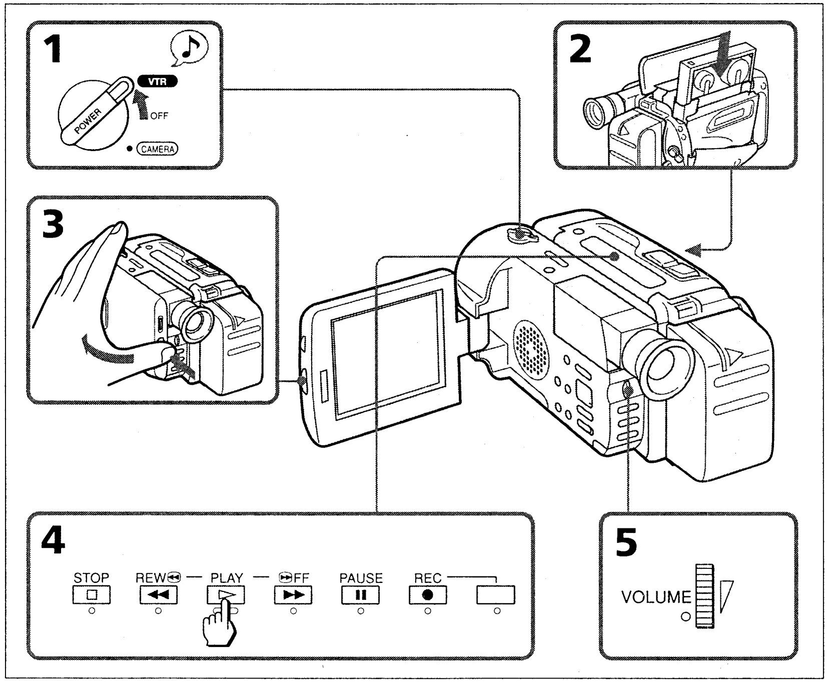
(2) Inserte la cinta grabada con la parte transparente hacia fuera.

(3) Presione PUSH OPEN para abrir el panel LCD. Ajuste el ángulo del panel LCD o el brillo de la pantalla LCD, si es necesario. (p.16).

(4) Pulse ▷ para iniciar la reproducción.

(5) Ajuste el volumen con VOLUME.

Asimismo, es posible controlar la imagen en una pantalla de TV, después de conectar la videocámara a un televisor o a una videograbadora (p.47).



To Stop Playback

Press □ during playback.

To Rewind the Tape

Press ◀◀.

To Fast-forward the Tape

Press ▶▶.

When watching on the LCD screen

Turn the LCD panel vertically until it clicks, turn it over and move back to the body. **[a]**
The stand on the bottom is useful. **[b]**

Para detener la reproducción

Pulse □ durante la reproducción.

Para rebobinar la cinta

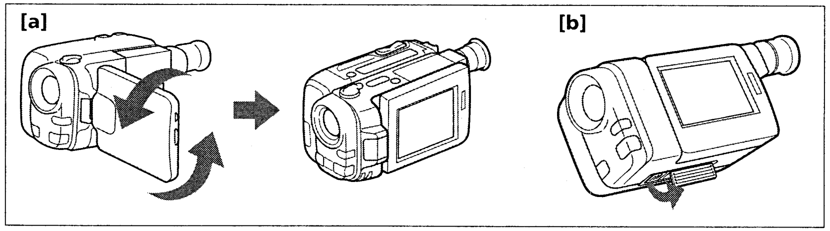
Pulse ◀◀.

Para avanzar la cinta rápidamente

Pulse ▶▶.

Al visualizar la pantalla LCD

Gire el panel LCD verticalmente hasta que se oiga un clic, dele la vuelta y desplácelo de nuevo hacia la unidad. **[a]**
El soporte de la parte inferior resulta útil. **[b]**



Note on DISPLAY button

Press DISPLAY to erase the screen indicators on the LCD screen. To display the indicators, press it again.

Using headphones

Connect headphones (not supplied) to the ∩ jack. You can adjust the volume of the headphones using VOLUME.

To view the playback picture in the viewfinder

Close the LCD panel. The viewfinder turns on automatically. When using the viewfinder, you can monitor the sound only by using headphones.
To view on the LCD screen again, open the LCD panel. The viewfinder turns off automatically.

Nota sobre el botón DISPLAY

Pulse DISPLAY para visualizar los indicadores de pantalla en la pantalla LCD. Para borrarlos, vuelva a pulsarlo.

Uso de auriculares

Conecte los auriculares (no suministrados) a la toma ∩. Es posible ajustar el volumen de los auriculares con VOLUME.

Para visualizar la imagen de reproducción en el visor electrónico

Cierre el panel LCD. El visor se activa automáticamente. Cuando utilice el visor, es posible controlar el sonido sólo mediante el uso de auriculares.
Para volver a visualizar imágenes en la pantalla LCD, abra el panel LCD. El visor se desactiva automáticamente.

Various Playback Modes

You can enjoy pictures with little noise on the LCD screen during still, slow and picture search. **(CRYSTAL-CLEAR still/slow/picture search)**

To View a Still Picture (Playback pause)

Press II during playback. To resume playback, press II or ▷.

To Locate a Scene (Picture search)

Keep pressing ◀◀ or ▶▶ during playback. To resume normal playback, release the button.

To Monitor the High-speed Picture while Advancing the Tape or Rewinding (Skip scan)

Keep pressing ◀◀ while rewinding or ▶▶ while advancing the tape. To resume normal playback, press ▷.

To View the Picture in a Sequence of Stop-motion Images

Press EDITSEARCH in Playback pause mode. If you keep pressing EDITSEARCH, you can view the picture play back in the forward (+) or reverse (–) direction.

To View the Picture at 1/5 Speed (Slow playback) (only with the Remote Commander)

Press I▶ on the Remote Commander during playback. To resume normal playback, press ▶. If slow playback lasts for about 1 minute, it shifts to normal speed automatically.

Notes on playback

- Streaks appear and the sound is muted in the various playback modes.
- When Playback pause mode lasts for 5 minutes, the camcorder automatically enters stop mode.

To select the monitor sound

Change the "HiFi SND" mode setting in the menu system (p.44).

Diversos modos de reproducción

Es posible obtener imágenes con muy poco nivel de ruido en la pantalla LCD durante el modo de imagen fija, a cámara lenta y de búsqueda de imágenes. **(Búsqueda de imagen/mode de imagen fija/a cámara lenta CRYSTAL-CLEAR)**

Para visualizar una imagen fija (Pausa de reproducción)

Pulse II durante la reproducción. Para reanudar la reproducción, pulse II o ▷.

Para localizar una escena (Búsqueda de imagen)

Mantenga pulsado ◀◀ o ▶▶ durante la reproducción. Para reanudar la reproducción normal, suelte el botón.

Para controlar la imagen de alta velocidad mientras avanza o rebobina la cinta (Exploración de omisión)

Mantenga pulsado ◀◀ mientras rebobina o ▶▶ mientras avanza la cinta. Para reanudar la reproducción normal, pulse ▷.

Para visualizar la imagen en una secuencia de imágenes detenidas

Pulse EDITSEARCH en el modo de pausa de reproducción. Si lo mantiene pulsado, es posible visualizar la reproducción de la imagen en sentido progresivo (+) o inverso (–).

Para visualizar la imagen a la mitad de la velocidad normal (Reproducción a cámara lenta) (sólo con el mando a distancia)

Pulse I▶ en el mando a distancia durante la reproducción. Para reanudar la reproducción normal, pulse ▶. Si la duración de la reproducción a cámara lenta es de 1 minuto aproximadamente, la unidad vuelve a la velocidad normal automáticamente.

Notas sobre la reproducción

- En los diversos modos de reproducción, aparecen rayas y se omite el sonido.
- Si la duración del modo de pausa de reproducción es de 5 minutos, la videocámara

Para seleccionar el sonido del monitor

Cambie el ajuste del modo "HiFi SND" en el sistema de menús (p. 44).

Searching for the End of the Picture

Búsqueda del final de la imagen

You can go to the end of the recorded portion.
It is convenient when you restart recording after you played back the recorded portion.
This function works when the POWER switch is set to either CAMERA or VTR.

(1) While pressing PUSH OPEN, open the LCD panel. Adjust the angle of the LCD panel or the brightness of the LCD screen if necessary. (p.16).

(2) Press END SEARCH after you record and play back the tape. The tape starts rewinding or fast-forwarding and the last 3 seconds of the recorded position plays back. Then the tape stops at the end of the recorded picture. **(End Search)**

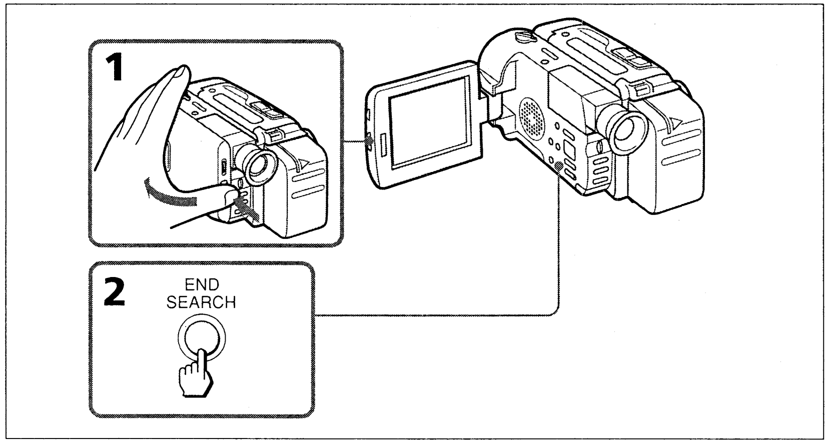
End Search function does not work once you eject the cassette after you recorded.

Es posible ir al final de la parte grabada.
Es conveniente volver a iniciar la grabación después de reproducir la parte grabada.
Esta función es operativa cuando el conmutador POWER está situado en la posición CAMERA o VTR.

(1) Mientras pulsa PUSH OPEN, abra el panel LCD. Ajuste el ángulo del panel LCD o el brillo de la pantalla LCD si es necesario. (p.16)

(2) Pulse END SEARCH después de la grabación y reproduzca la cinta. Ésta se rebobina o avanza rápidamente y se reproducen los 3 últimos segundos de la posición de grabación. A continuación, la cinta se detiene al final de la imagen grabada. **(Búsqueda del final)**

La función de búsqueda final no se activará una vez que extraiga el cassette después de grabarlo.



Using Alternate Power Sources

Uso de fuentes de alimentación Alternativas

You can choose any of the following power sources for your camcorder: battery pack (p.6), the mains, and 12/24 V car battery. Choose the appropriate power source depending on where you want to use your camcorder.

Place	Power source	Accessory to be used
Indoors	The mains	AC power adaptor AC-V26 (supplied)
Outdoor	Battery pack	Battery pack NP-66 (supplied), NP-77H/77HD, NP-C65, NP-55H
In the car	12 V or 24 V car battery	DC pack DCP-77

Note on power sources

Disconnecting the power source or removing the battery pack during recording or playback may damage the inserted tape. If this happens, restore the power supply again immediately.

Puede elegir cualquiera de las siguientes fuentes de alimentación para la videocámara: batería (p.6), cable de alimentación de red y batería para automóvil de 12/24 V. Elija la fuente de alimentación apropiada en función del lugar en el que desee utilizar la videocámara.

Lugar	Fuente de alimentación	Accesorio que va a utilizarse
Interiores	Cable de alimentación de red	Adaptador de alimentación de CA AC-V26 (suministrado),
Exterior	Batería	Batería NP-66 (suministrada), NP-77H/77HD, NP-C65, NP-55H
Automóvil	Batería para automóvil de 12 V o 24 V	Paquete de CC DCP-77

Nota sobre fuentes de alimentación

Es posible que la cinta insertada se dañe si durante la grabación o la reproducción desconecta la fuente de alimentación o extrae la batería. Si esto ocurre, vuelva a conectar el suministro de alimentación inmediatamente.

Using the Mains

To use the supplied AC power adaptor:

(1) Lift up the viewfinder.

(2) Connect the mains lead to a wall outlet. Connect the bottom of the AC power adaptor to the battery mounting surface of the camcorder.

(3) Set the selector to VTR (DC OUT).

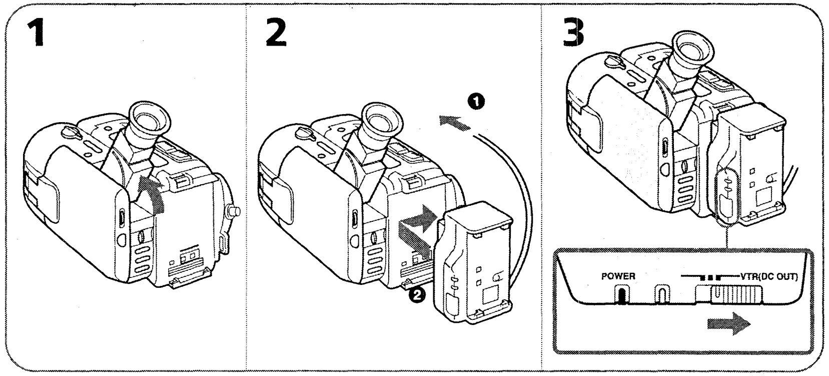
Uso del cable de alimentación de red

Para utilizar el adaptador de alimentación de CA suministrado:

(1) Levante el visor electrónico.

(2) Conecte el cable de alimentación a una toma mural. Conecte la parte inferior del adaptador de alimentación de CA a la superficie de montaje de batería de la videocámara.

(3) Ajuste el selector en la posición VTR (DC OUT).



WARNING

Mains lead must only be changed at qualified service shop.

PRECAUTION

The unit is not disconnected from the AC power source as long as it is connected to the wall outlet, even if the set itself has been turned off.

Notes on the POWER lamp

- The POWER lamp will remain lit for a while even if the unit is unplugged after use. This is normal.
- If the POWER lamp does not light, set the selector to the centre position and disconnect the mains lead. After about one minute, reconnect the mains lead and set the selector to VTR (DC OUT) again.

To Remove the Adaptor

The adaptor is removed in the same way as the battery pack (p.9).

ADVERTENCIA

Reemplace el cable de alimentación sólo en un establecimiento especializado.

PRECAUCIóN

La unidad no se desconectará de la fuente de alimentación de CA mientras esté conectada a la toma mural, incluso si la ha apagado.

Notas sobre el indicador POWER

- El indicador POWER permanecerá iluminado durante unos instantes, incluso si ha desenchufado la unidad después de utilizarla. Esto es normal.
- Si el indicador POWER no se ilumina, ajuste el selector en la posición central y desconecte el cable de alimentación. Después de un minuto aproximadamente, vuelva a conectar el cable de alimentación y a ajustar el selector en la posición VTR (DC OUT).

Para extraer el adaptador

Extráigalo de la misma forma que la batería (p.9).

Using Alternate Power Sources

Using a Car Battery

Use the DCP-77 DC pack (not supplied). Connect the cord of the DC pack to the cigarette lighter socket of a car (12 V or 24 V). Connect the DC pack to the battery mounting surface of the camcorder.

To Remove the DC Pack

The DC pack is removed in the same way as the battery pack. (p.9)

This mark indicates that this product is a genuine product related to our 8mm video equipment.
When purchasing our 8mm video equipment, we recommend that you purchase related 8mm video products provided with the same mark or products provided with our logotype mark.

Uso de fuentes de alimentación alternativas

Uso de una batería para automóvil

Utilice el paquete DCP-77 DC (no suministrado). Conecte el cable del paquete de CC a la clavija del encendedor de cigarrillos de un automóvil (12 V o 24 V). Conecte el paquete de CC a la superficie de montaje de batería de la videocámara.

Para extraer el paquete de CC

Extráigalo de la misma forma que la batería. (p.9)

Esta marca indica que este producto es genuino y está relacionado con nuestro equipo de vídeo de 8mm.
A la hora de adquirir nuestro equipo de vídeo de 8mm., recomendamos que adquiera productos de vídeo de 8 mm. relacionados que dispongan de esta marca u otros con nuestro logotipo.

Recording with the Date or Time

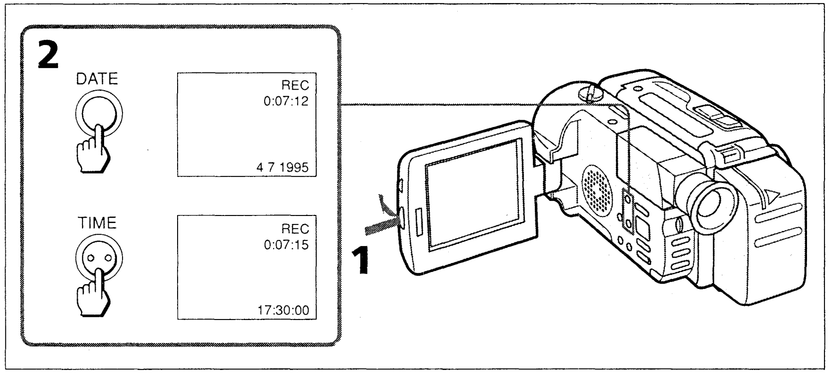
You can record the date or time displayed on the LCD screen or in the viewfinder with the picture. You cannot record the date and time at the same time. Except for the date or time indicator, no indicator on the LCD screen or in the viewfinder is recorded.
The clock is already set at the factory; to Sydney time for Australia and New Zealand models, to Tokyo time for the models sold in Japan and to Hong Kong time for other models. You can reset the clock in the menu system (p.54).

(1) While pressing PUSH OPEN, open the LCD panel.
(2) Press DATE or TIME before you start recording.

Grabación de la fecha o la hora

Es posible grabar la fecha o la hora que aparecen en la pantalla LCD o en el visor electrónico con la imagen. No es posible grabar dichos elementos a la vez. No se graba ningún otro indicador de la pantalla LCD ni del visor electrónico, excepto los indicadores de la fecha y la hora.
El reloj está ajustado de fábrica a la hora de Sidney para los modelos de Australia y Nueva Zelanda, a la de Tokio para los modelos comercializados en Japón y a la de Hong Kong para otros modelos. Es posible volver a ajustar el reloj en el sistema de menús (p.54).

(1) Mientras pulsa PUSH OPEN, abra el panel LCD.
(2) Pulse DATE o TIME antes de iniciar la grabación.



To Stop Recording with the Date or Time

Press DATE or TIME again. The date or time indicator disappears. The recording continues without the date or time.

Para detener la grabación de la fecha o de la hora

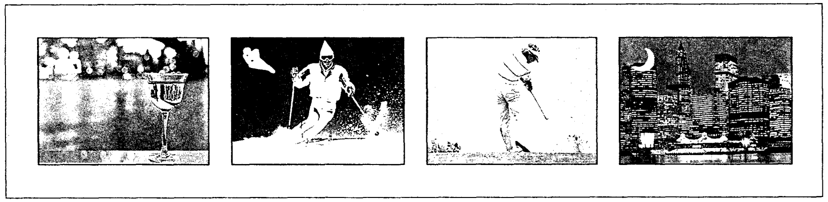
Vuelva a pulsar DATE o TIME. El indicador de la fecha o de la hora desaparece. La grabación continúa sin fecha ni hora.

Using the PROGRAM AE Function

You can select from four PROGRAM AE (Auto Exposure) modes to suit your shooting situation. When you use PROGRAM AE, you can get a Portrait effect (the subject is in focus and the background is out of focus), capture high-speed action or record night views.

Selecting the Best Mode

Select one of four modes, referring to the following.



Portrait mode
- A still subject such as a person or flower
- Zooming in on a subject in the telephoto mode
- A subject behind an obstacle such as a net

Sports mode
- Outdoor sports scenes such as football, tennis, golf or skiing
- A landscape in a moving car

High-speed shutter mode
- A golf swing or tennis match in fine weather with the ball captured clearly
- Playing back certain scenes with high-speed movements in clear, sharp picture

Twilight mode
Recording night views, neon signs or fireworks

Uso de la función PROGRAM AE

Es posible seleccionar cuatro modos diferentes de PROGRAM AE (Exposición automática) que se adapten a su situación de filmación. Con el uso de la función PROGRAM AE, es posible obtener un efecto de retrato (se enfoca el objeto y el fondo no se incluye en dicho enfoque), filmar acciones de gran velocidad o grabar vistas nocturnas.

Selección del modo idóneo

Seleccione uno de los cuatro modos que aparecen a continuación.

Modo de retrato
- Objetos fijos como una persona o una flor
- Uso del zoom para filmar un objeto en el modo de telefoto
- Objetos detrás de un obstáculo, como una red

Modo deportivo
- Escenas de deportes al aire libre como el fútbol, el tenis, el golf o el esquí
- Panorámicas desde un automóvil en marcha

Modo de obturación de alta velocidad
- Un swing de golf o un partido de tenis con buen tiempo visualizando la pelota con nitidez
- Reproducción de ciertas escenas con movimientos de gran velocidad con una imagen clara y nítida

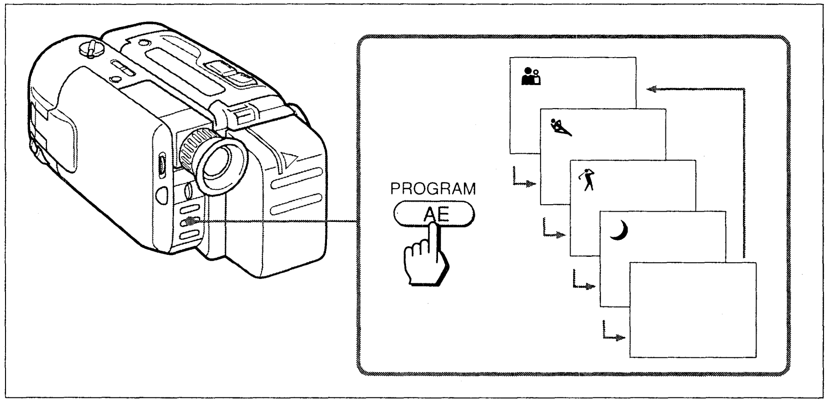
Modo de crepúsculo
Grabación de vistas nocturnas, letreros de neón o fuegos artificiales

Using the PROGRAM AE Function

Each press of PROGRAM AE changes the mode. Repeat pressing PROGRAM AE until the desired mode appears. The indicator of the selected PROGRAM AE mode appears in the viewfinder or on the LCD screen.

Uso de la función PROGRAM AE

Cada vez que pulse PROGRAM AE, el modo cambia. Siga pulsándolo hasta que aparezca el modo que desee. El indicador del modo PROGRAM AE seleccionado aparece en el visor electrónico o en la pantalla LCD.



Note on shutter speed
The shutter speed in each PROGRAM AE mode is as follows:
Portrait mode — between 1/50 to 1/2000
Sports mode — between 1/50 to 1/500
High-speed shutter mode — 1/4000
Twilight mode — 1/50

Nota sobre la velocidad de obturación
La velocidad de obturación de cada modo PROGRAM AE es como se indica a continuación.
Modo de retrato — entre 1/50 y 1/2000
Modo deportivo — entre 1/50 y 1/500
Modo de obturación de alta velocidad — 1/4000
Modo de crepúsculo — 1/50

Enjoying Picture Effect

Disfrute del efecto de imagen

You can make interesting pictures, like those of television with Picture Effect function.

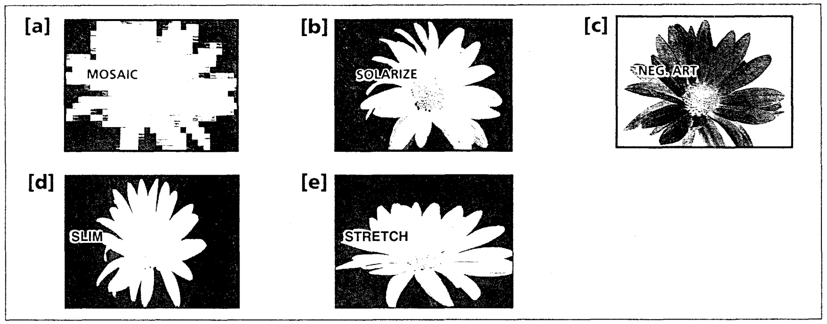
Selecting the Best Modes

Select one of seven modes, referring to the following.

Es posible realizar atractivas películas, como las de televisión, con la función de efecto de imagen.

Selección de los modos idóneos

Seleccione uno de los cinco modos que aparecen a continuación.



MOSAIC [a]
The picture becomes mosaic.

SOLARIZE [b]
The light intensity is more clear, and the picture looks like a painting.

B&W
The picture is monochrome (black and white).

SEPIA
The picture is sepia.

NEG. ART [c]
The colour of the picture is reversed.

SLIM [d]
The picture becomes slim.

STRETCH [e]
The picture is stretched.

MOSAIC [a]
La imagen aparece como un mosaico.

SOLARIZE [b]
La intensidad luminosa es mayor y la imagen parece una pintura.

B&W
La imagen es monocroma (blanco y negro).

SEPIA
La imagen es de color sepia.

NEG. ART [c]
El color de la imagen se invierte.

SLIM [d]
La imagen se estrecha.

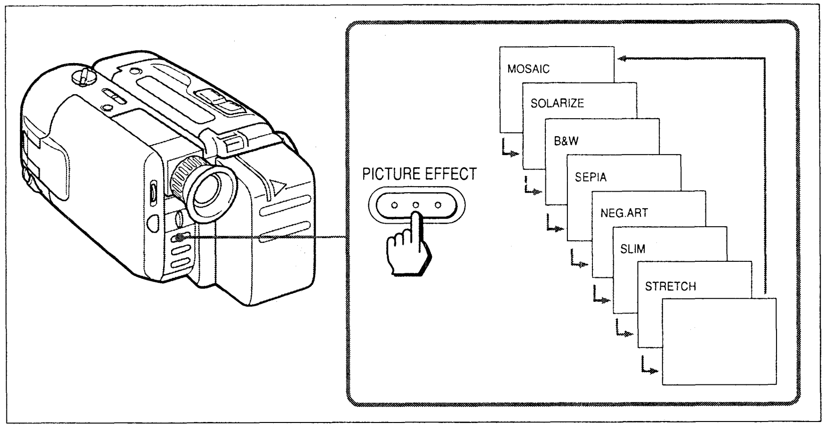
STRETCH [e]
La imagen se amplía.

Using the Picture Effect Function

Each press of PICTURE EFFECT changes the mode. Repeat pressing PICTURE EFFECT until the desired mode appears. The indicator of the selected PICTURE EFFECT mode appears in the viewfinder or on the LCD screen.

Uso de la función de efecto de imagen

Cada vez que pulse PICTURE EFFECT, el modo cambia. Siga pulsándolo hasta que aparezca el modo que desee. El indicador del modo PICTURE EFFECT seleccionado aparece en el visor electrónico o en la pantalla LCD.



You can check the changed picture in the viewfinder or on the LCD screen.

Note on Picture Effect
When you turn the power off, the camcorder returns automatically to normal mode.

Es posible comprobar la imagen cambiada en el visor electrónico o en la pantalla LCD.

Nota sobre el efecto de imagen
Al desconectar la alimentación, la videocámara vuelve automáticamente al modo normal.

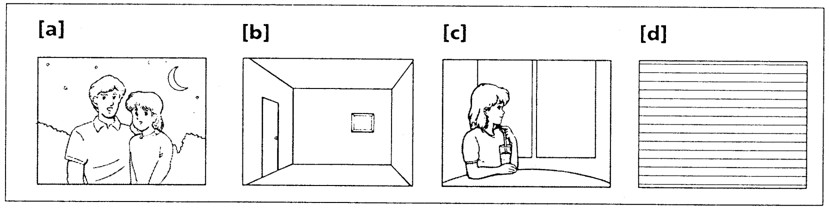
Focusing Manually Enfoque manual

When to Use Manual Focus

In the following cases you should obtain better results by adjusting the focus manually.

Empleo del enfoque manual

En los siguientes casos, obtendrá mejores resultados si realiza el enfoque manualmente.



- Insufficient light **[a]**
- Subjects with little contrast — walls, sky, etc.**[b]**
- Too much brightness behind the subject **[c]**
- Horizontal stripes **[d]**
- Bright subject or subject reflecting light
- Shooting a stationary subject when using a tripod

- Iluminación insuficiente **[a]**
- Objetos con poco contraste — paredes, cielo, etc.**[b]**
- Demasiado brillo detrás del objeto **[c]**
- Rayas horizontales **[d]**
- Objeto brillante o que refleja luz
- Filmación de un objeto inmóvil utilizando un trípode

Focusing Manually

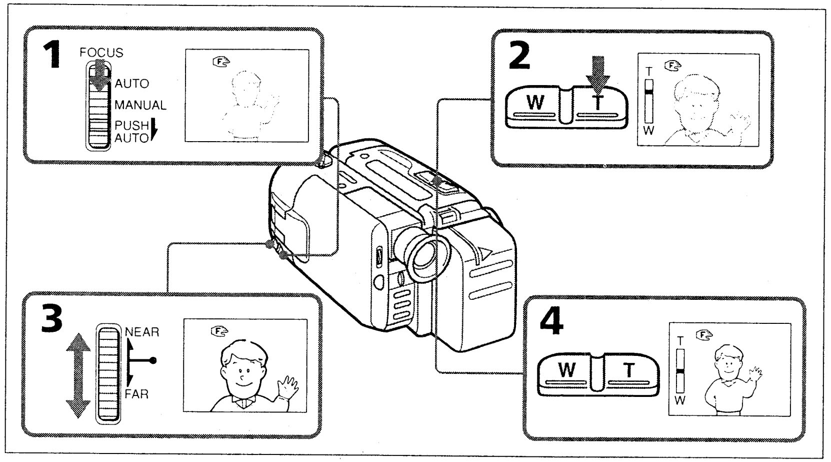
When focusing manually, first focus in telephoto before recording, and then reset the shot length.

(1) Set FOCUS to MANUAL. The Ⓕ indicator appears in the viewfinder or on the LCD screen.
(2) Keep pressing the "T" (telephoto) side of the power zoom button until the zooming stops.
(3) Turn the focus dial to achieve a sharp focus.
(4) Set the desired shot length using the power zoom button.

Enfoque manual

Al realizar el enfoque manual, utilice en primer lugar el modo de telefoto antes de filmar y, a continuación, restaure la longitud de filmación.

(1) Sitúe FOCUS en la posición MANUAL. El indicador Ⓕ aparecerá en el visor electrónico o en la pantalla LCD.
(2) Mantenga pulsado el lado "T" (telefoto) del botón de zoom hasta que se detenga el proceso de zoom.
(3) Gire el dial de enfoque para obtener una imagen nítida.
(4) Ajuste la longitud de filmación que desee mediante el botón de zoom.



To Reactivate Auto Focusing

Set FOCUS to AUTO. The Ⓕ indicator in the viewfinder disappears.

Shooting in relatively dark places

Shoot at wide angles after focusing in telephoto.

Note on the focus dial

The focus dial does not have a stop position.

To Shoot with Auto Focusing Momentarily

While shooting with manual focusing, press FOCUS down (PUSH AUTO).

When you release, manual focusing will resume. Use this switch when focusing on one subject to the other for natural focusing.

Para reactivar el enfoque automático

Ajuste FOCUS en la posición AUTO. El indicador Ⓕ del visor electrónico desaparece.

Filmación en lugares relativamente oscuros

Utilice el modo de gran angular después del modo de telefoto.

Nota sobre el dial de enfoque

El dial de enfoque no dispone de una posición de parada.

Filmación momentánea con el modo de enfoque automático

Mientras videofilma con el modo de enfoque manual, pulse FOCUS (PUSH AUTO).

Al soltarlo, se restaurará el modo de enfoque manual. Utilice este selector cuando enfoque distintos objetos consecutivamente para proporcionar naturalidad.

Fade-in and Fade-out

You can fade in or out to give your recording a professional appearance.
When fading in, the picture gradually fades in from black or mosaic while the sound increases.
When fading out, the picture gradually fades to black or mosaic while the sound decreases.

When Fading in [a]

(1) While the camcorder is in Standby mode, press FADER. The fade indicator starts flashing.

(2) Press START/STOP to start recording. The fade indicator stops flashing and the picture appears gradually.

When Fading out [b]

(1) During recording, press FADER. The fade indicator starts flashing.

(2) Press START/STOP to stop recording. The fade indicator stops flashing. The picture fades out and then recording stops.

Aparición y desaparición gradual

Es posible fundir imágenes gradualmente para darle a sus grabaciones una apariencia más profesional.
Al utilizar la función de aparición gradual, la imagen aparece gradualmente a partir del negro o mosaico, mientras que el sonido aumenta. Al utilizar la función de desaparición gradual, la imagen desaparece gradualmente hasta que se oscurece o tama el aspecto de mosaico, mientras que el sonido disminuye.

Al utilizar la función de aparición gradual [a]

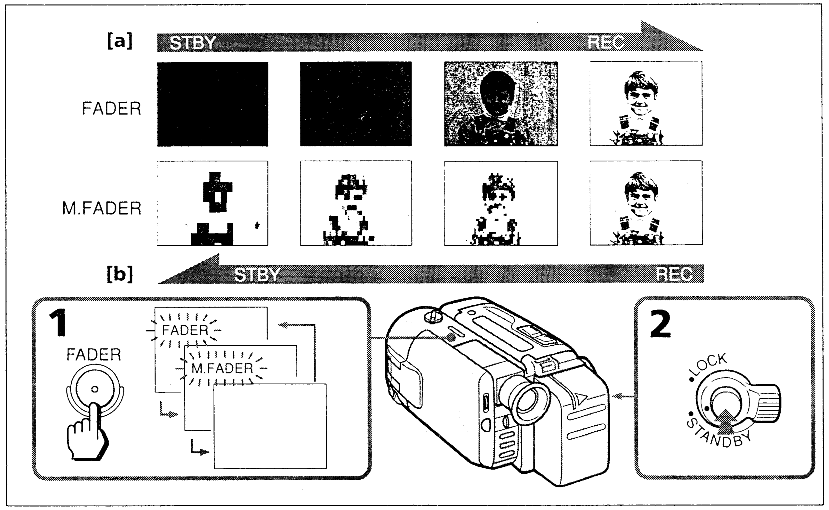
(1) Mientras la videocámara se encuentra en el modo de espera, pulse FADER. El indicador de aparición y desaparición gradual comienza a parpadear.

(2) Pulse START/STOP para iniciar la grabación. El indicador de aparición y desaparición gradual deja de parpadean.

Al utilizar la función de desaparición gradual [b]

(1) Durante la grabación, pulse FADER. El indicador de aparición y desaparición gradual comienza a parpadear.

(2) Pulse START/STOP para detener la grabación. El indicador de aparición y desaparición gradual deja de parpadear. La imagen desaparece y se detiene la grabación.



To Cancel the Fade-in/Fade-out Function

Before pressing START/STOP, press FADER until the fade indicator disappears.

When the date/time indicator is displayed

The date/time indicator does not fade in nor fade out.

Para cancelar la función de aparición/desaparición gradual

Antes de pulsar START/STOP, pulse FADER hasta que el indicador de aparición y desaparición gradual desaparezca.

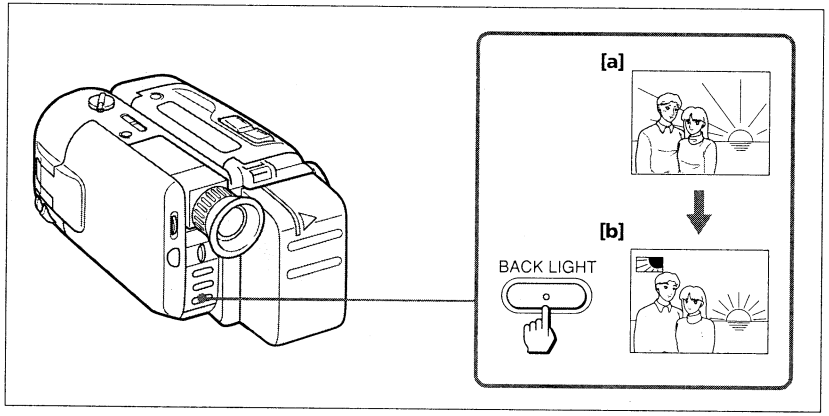
Si visualiza el indicador de fecha/hora

El indicador de fecha/hora no aparece ni desaparece gradualmente.

Shooting with Backlighting

When you shoot a subject with the light source behind the subject or a subject with a light background, use the BACK LIGHT function.

Press BACK LIGHT. The ◪ indicator appears in the viewfinder or on the LCD screen.



[a] Subject is too dark because of backlight.
[b] Subject becomes bright with backlight compensation.

After Shooting

Be sure to release this adjustment condition by pressing BACK LIGHT again. The ◪ indicator disappears. Otherwise, the picture will be too bright under normal lighting condition.

This function is also effective under following conditions:

- On snow e.g. at a ski resort
- At the beach under strong sunshine
- A subject with a light source nearby or a mirror reflecting light
- A white subject against a white background. Especially when you shoot a person wearing shiny clothes made of silk or synthetic fiber, his or her face tends to become dark if you do not use this function.

Filmación a contraluz

Si filma un objeto con la fuente de iluminación situada detrás de dicho objeto o si éste presenta un fondo luminoso, utilice la función BACK LIGHT.

Pulse BACK LIGHT. El indicador ◪ aparece en el interior del visor electrónico o en la pantalla LCD.

[a] El objeto aparece demasiado oscuro debido al contraluz.
[b] El objeto aparece con claridad por la compensación del contraluz.

Después de la filmación

Asegúrese de anular este ajuste volviendo a pulsar BACK LIGHT. El indicador ◪ desaparece. De lo contrario, la imagen será demasiado luminosa en condiciones de iluminación normales.

Asimismo, es posible aplicar esta función en las siguientes condiciones:

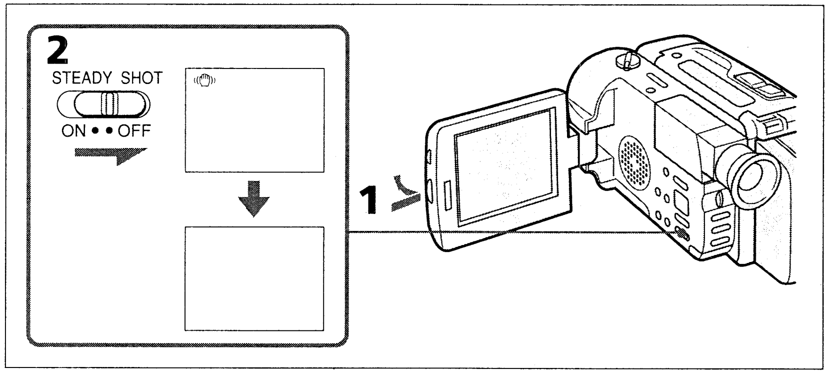
- En la nieve, por ejemplo, en una estación de esquí
- En la playa bajo una luz solar intensa
- Objetos con una fuente de iluminación cercana o un espejo que refleje la luz
- Objetos blancos contra un fondo blanco. Utilice esta función especialmente si filma a una persona con ropa luminosa de seda o fibras sintéticas. De lo contrario, la cara aparecerá oscura.

Releasing the STEADY SHOT Function

When you shoot, the ((✋)) indicator appears in the viewfinder or on the LCD screen. This indicates that the Steady Shot function is working and the camcorder compensates for camera-shake.

You can release the Steady Shot function. Do not use the Steady Shot function such as when shooting stationary object with a tripod.

(1) While pressing PUSH OPEN, open the LCD panel.
(2) Set STEADY SHOT to OFF.



To Activate the Steady Shot Function Again

Set STEADY SHOT to ON.

Notes on the Steady Shot function

- The Steady Shot function will not correct excessive camera-shake.
- When you switch the STEADY SHOT, the exposure may fluctuate.

Desactivación de la función STEADY SHOT

Al filmar, el indicador ((✋)) aparece en el visor electrónico o en la pantalla LCD. Esto indica que la función de estabilización de imagen (Steady Shot) está funcionando y que la videocámara compensa la vibración de la cámara.

Es posible desactivar la función de estabilización de imagen (Steady Shot). No emplee esta función cuando esté filmando un objeto inmóvil con un trípode.

(1) Mientras pulsa PUSH OPEN, abra el panel LCD.
(2) Ajuste STEADY SHOT en la posición OFF.

Para volver a activar la función de estabilización de imagen (Steady Shot)

Ajuste STEADY SHOT en la posición ON.

Notas sobre la función de estabilización de imagen

- Esta función no corregirá la vibración excesiva de la cámara.
- Al activar STEADY SHOT, es posible que flutúe la exposición.

1-25

Changing the Mode Settings

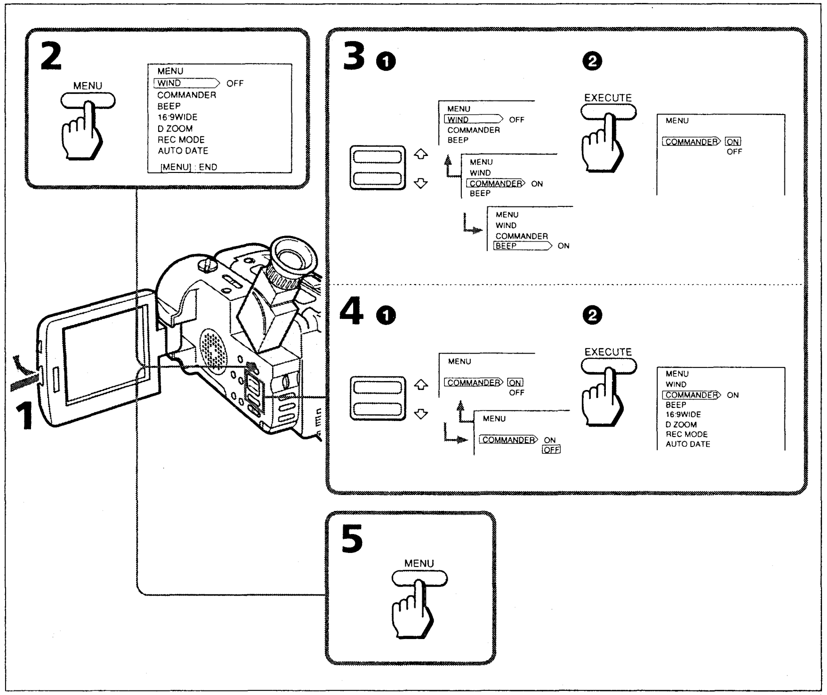
You can change the mode settings in the menu system to further enjoy the features and functions of the camcorder.
The menu contents of CAMERA mode are different from those of VTR mode.

(1) While pressing PUSH OPEN, open the LCD panel.
(2) Press MENU to display the menu on the LCD screen.
(3) Press ↑ or ↓ to select the desired item, then press EXECUTE.
(4) Press ↑ or ↓ to set the desired mode, then press EXECUTE. If you want to change the other modes, repeat steps 3 and 4.
(5) Press MENU to erase the menu display.

Cambio de los ajustes de modo

Es posible cambiar los ajustes de modo en el sistema de menús para disfrutar en mayor medida de las características y funciones de la videocámara.
El contenido de los menús del modo CAMERA es distinto del contenido del modo VTR.

(1) Presione PUSH OPEN para abrir el panel LCD.
(2) Pulse MENU para visualizar el menú en la pantalla LCD.
(3) Pulse ↑ o ↓ para seleccionar el elemento que desee y, a continuación, pulse EXECUTE.
(4) Pulse ↑ o ↓ para ajustar el modo que desee y, a continuación, pulse EXECUTE. Si desea cambiar los otros modos, repita los pasos 3 y 4.
(5) Pulse MENU para borrar la pantalla de menú.



Selecting the Mode Setting of Each Item

Items in CAMERA and VTR Modes

COMMANDER <ON/OFF>

- Select ON when using the supplied wireless Remote Commander for the camcorder.
- Select OFF when not using the Remote Commander for the camcorder.

BEEP <ON/OFF>

- Select ON to turn the beep sound on.
- Select OFF to turn the beep sound off.

REC MODE <SP/LP>*

- Select SP to record a tape in SP (standard play) mode.
- Select LP to record a tape in LP (long play) mode.

COLOR*

Select this item and change the level of the indicator by press ↑ or ↓ to adjust the colour intensity of the picture when using the LCD.

Items in CAMERA Mode only

WIND <ON/OFF>

- Select ON to reduce wind noise when recording in strong wind.
- Normally select OFF.

16:9WIDE <OFF/CINEMA/FULL>*

Select this item to record in wide mode (p.45).

D ZOOM <ON/OFF>*

- Select ON to activate digital zooming.
- Select OFF otherwise. The zooming ability becomes 12 x.

AUTO DATE <ON/OFF>*

- Select ON to record the date for 10 seconds after recording has started. (AUTO DATE feature p.13).
- Select OFF not to record the date.

Continued to the next page.

Selección del ajuste de modo de cada elemento

Elementos de los modos CAMERA y VTR

COMMANDER <ON/OFF>

- Seleccione ON cuando utilice el mando a distancia inalámbrico suministrado para la videocámara.
- Seleccione OFF cuando no utilice el mando a distancia para la videocámara.

BEEP <ON/OFF>

- Seleccione ON para activar el pitido.
- Seleccione OFF para desactivar el pitido.

REC MODE <SP/LP>*

- Seleccione SP para grabar una cinta en el modo SP (reproducción estándar).
- Seleccione LP para grabar una cinta en el modo LP (larga duración).

COLOR*

Seleccione este elemento y cambie el nivel del indicador pulsando ↑ o ↓ para ajustar la intensidad de color de la imagen cuando utilice la pantalla LCD.

Elementos sólo del modo CAMERA

WIND <ON/OFF>

- Seleccione ON para reducir el ruido del viento al grabar con viento fuerte.
- Normalmente, seleccione OFF.

16:9WIDE <OFF/CINEMA/FULL>*

Seleccione esta opción para grabar en el modo de gran angular (p.45).

D ZOOM <ON/OFF>*

- Seleccione ON para activar el modo de zoom digital.
- De otro modo, seleccione OFF. La capacidad de zoom cambia a 12 x.

AUTO DATE <ON/OFF>*

- Seleccione ON para grabar la fecha durante 10 segundos después del inicio de la grabación. (Función AUTO DATE p.13).
- Seleccione OFF para no grabar la fecha.

Continúa en la página siguiente.

Changing the Mode Settings

REC LAMP <ON/OFF>*
- Select ON to let the camera recording/battery lamp on the front panel light during recording.
- Select OFF not to let it light.

CLOCK SET*
Select this item to reset the date or time. (p.54).

Item for VTR Mode only

EDIT <ON/OFF>
- Select ON to minimize picture deterioration when editing.
- Normally select OFF.

HiFi SND <STEREO/1/2>
- Normally select STEREO.
- Select 1 or 2 to play back a dual soundtrack tape.

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* These settings are retained even when battery is removed, as long as the lithium battery is in place.

Cambio de los ajustes de modo

REC LAMP <ON/OFF>*
- Seleccione ON para que el indicador de grabación/batería del panel frontal de la cámara se ilumine durante la grabación.
- Seleccione OFF para que no se ilumine.

CLOCK SET*
Seleccione este elemento para volver a ajustar la fecha o la hora. (p.54).

Elemento sólo del modo VTR

EDIT <ON/OFF>
- Seleccione ON para minimizar el deterioro de imagen al editar.
- Normalmente, seleccione OFF.

HiFi SND <STEREO/1/2>
- Normalmente, seleccione STEREO.
- Seleccione 1 o 2 para reproducir una cinta con pista de sonido dual.

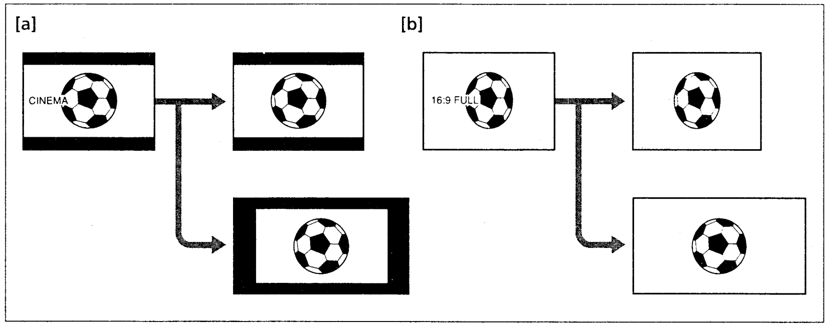
---

* Estos ajustes se mantienen incluso si extrae la batería, siempre que la pila de litio esté instalada.

Using the Wide Mode Function

Selecting the Desired Mode

You can record a cinemalike picture (CINEMA) or a 16:9 wide picture to watch on the 16:9 wide-screen TV (16:9 FULL).



CINEMA [a]

Black bands appear at the top and the bottom of the screen, and the viewfinder and a normal TV screen look wide. You can also watch the picture without black bands on a wide-screen TV.

16:9 FULL [b]

The picture in the viewfinder or on a normal TV is horizontally compressed. You can watch the picture of normal images on a wide-screen TV.

Notes on wide mode
- If 16:9 WIDE is set to FULL, the Steady Shot function does not work and the ((✋)) indicator flashes.
- When you record in FULL mode, the date or time will be widened on the wide TV.
- If you dub a tape, the tape is copied in the same mode as the original recording.

See the next page for further information.

Uso de la función de gran angular

Selección del mode que desee

Podrá grabar una imagen como la del cine (CINEMA) o una imagen alargada de 16:9 para verla en un televisor de pantalla alargada de 16:9 (16:9 FULL).

CINEMA [a]

Aparecerán franjas negras en las partes inferior y superior de la pantalla, y las pantallas del visor y de un televisor normal aparecerán como alargadas. La imagen la podrá ver también sin las franjas negras en un televisor de pantalla alargada.

16:9 FULL [b]

La imagen en el visor o en un televisor normal se comprime horizontalmente. Las imágenes de una grabación normal las podrá ver también en un televisor de pantalla alargada.

Notas sobre el modo de gran angular
- Si ajusta 16:9 WIDE en la posición FULL, la función de estabilización de imagen (Steady Shot) no funcionará y el indicador ((✋)) parpadeará.
- Al grabar en el modo FULL, la fecha o la hora se ensancharán en un TV de pantalla panorámica.
- Si copia una cinta, se mantienen las características de la grabación original.

Consulte la página siguiente para obtener más información.

Using the Wide Mode Function

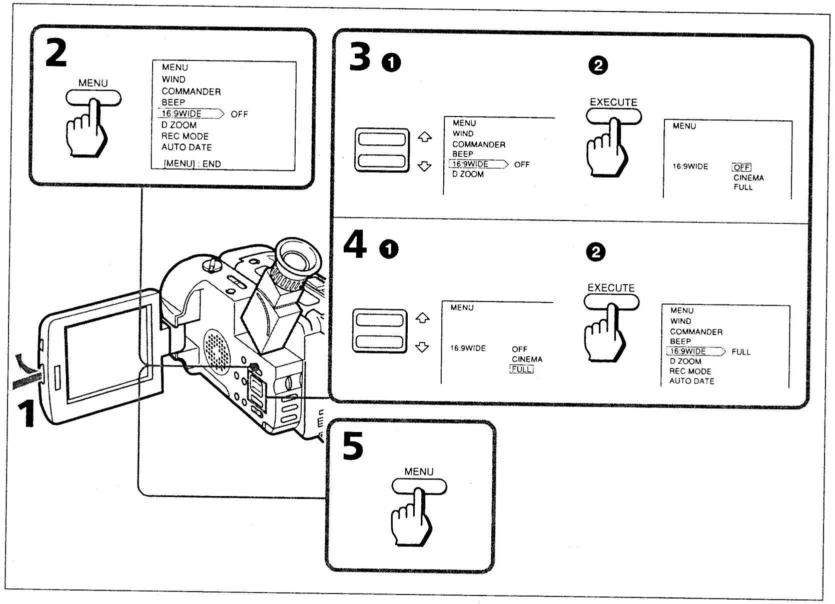
Uso de la función de gran angular

Using the Wide Mode Function

(1) While pressing PUSH OPEN, open the LCD panel.
(2) Press MENU to display the menu on the LCD screen.
(3) Select 16:9 WIDE, then press EXECUTE.
(4) Press ↑ or ↓ to select the desired mode, then press EXECUTE.
(5) Press MENU to erase the menu display.

Uso de la función de gran angular

(1) Mientras pulsa PUSH OPEN, abra el panel LCD.
(2) Pulse MENU para visualizar el menú en la pantalla LCD.
(3) Seleccione 16:9 WIDE y, a continuación, pulse EXECUTE.
(4) Pulse ↑ o ↓ para seleccionar el modo que desee y, a continuación, pulse EXECUTE.
(5) Pulse MENU para borrar la pantalla de menú.


2
MENU
MENU
WIND
COMMANDER
BEEP
16:9WIDE OFF
D ZOOM
REC MODE
AUTO DATE
[MENU] : END
3 ❶
❷
EXECUTE
MENU
WIND
COMMANDER
BEEP
16:9WIDE OFF
D ZOOM
MENU
16:9WIDE OFF
CINEMA
FULL
4 ❶
❷
EXECUTE
MENU
16:9WIDE OFF
CINEMA
FULL
MENU
WIND
COMMANDER
BEEP
16:9WIDE FULL
D ZOOM
REC MODE
AUTO DATE
5
MENU
1

To Cancel Wide Mode

Set 16:9 WIDE to OFF in the menu system.

To watch the tape recorded with FULL mode

Set the screen mode of the wide TV to full (16:9) mode. For details, refer to the instruction manual of the TV.
Note that the picture looks compressed on a normal TV.

Para cancelar el modo de gran angular

Ajuste 16:9 WIDE en la posición OFF en el sistema de menús.

Para visualizar la cinta grabada en el modo FULL

Seleccione el modo de pantalla completa (16:9) del TV panorámico. Para obtener información detallada, consulte el manual de instrucciones del TV. Observe que la imagen aparece comprimida en un TV normal.

Watching on a TV Screen

Visualización en una pantalla de TV

You can use the camcorder as a VCR. Connect the camcorder to the TV by using the supplied A/V connecting cable. There are two ways to connect the camcorder to your TV. When monitoring the playback picture by connecting the camcorder to your TV, we recommend you use the mains for the power source (p.29).

While playing back on a TV screen, close the LCD panel to reduce noise during various playback.

Connecting Directly to a TV

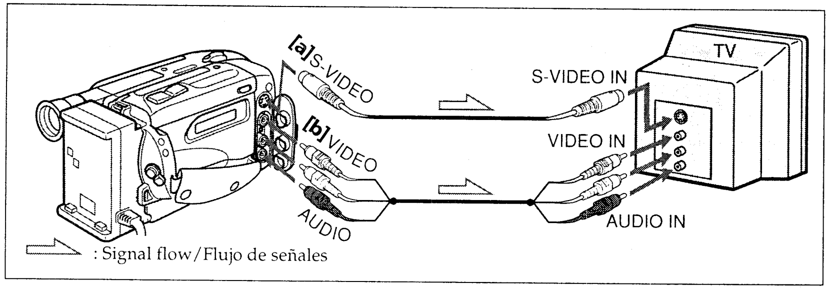
Connect the camcorder to the inputs on the TV by using the supplied A/V connecting cable. Set the TV/VCR selector on the TV to VCR.

Es posible utilizar la videocámara como una videograbadora. Conecte la videocámara al televisor mediante el cable de conexión de A/V suministrado. Existen dos formas para conectar la videocámara al televisor. Cuando controle la imagen de reproducción mediante la conexión de la videocámara al televisor, se recomienda el uso del cable de alimentación de red como fuente de alimentación (p.29).

Mientras reproduce en una pantalla de TV, cierre el panel LCD para reducir el ruido en diferentes reproducciones.

Conexión directa a un TV

Conecte la videocámara a las tomas de entrada del televisor mediante el cable de conexión de A/V suministrado. Ajuste el selector TV/VCR del televisor en la posición VCR.


[a] S-VIDEO
[b] VIDEO
AUDIO
TV
S-VIDEO IN
VIDEO IN
AUDIO IN
: Signal flow/Flujo de señales

If you are going to connect the camcorder using the S video cable **[a]**, you do not need to connect the yellow (video) plug of the A/V connecting cable **[b]**.

Si va a conectar la videocámara utilizando el cable S vídeo **[a]**, no es necesario conectar el enchufe amarillo (vídeo) del cable de conexión de A/V **[b]**.

See the next page for further information.

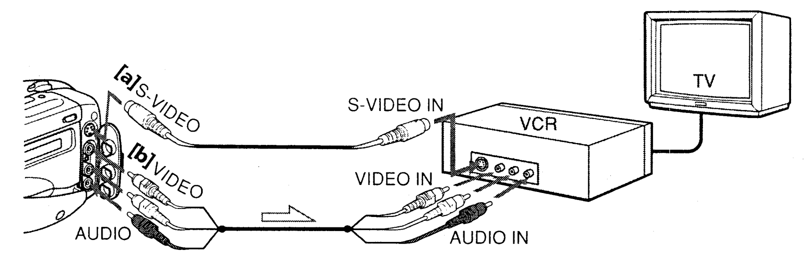
Consulte la página siguiente para obtener más información.

Watching on a TV Screen

Visualización en una pantalla de TV

If your VCR is already connected to a TV
Connect the camcorder to the LINE IN inputs on the VCR by using the A/V connecting cable. Set the TV/VCR selector on the TV to VCR.

Si la videograbadora ya está conectada a un televisor
Conecte la videocámara a las tomas de entrada LINE IN de la videograbadora mediante el cable de conexión de A/V. Ajuste el selector TV/VCR del televisor en la posición VCR.



: Signal flow/Flujo de señales

If your TV or VCR is a monaural type, connect only the white plug for audio on both the camcorder and the TV or the VCR. With this connection, the sound is monaural.

To connect a TV or a VCR without audio/video input jacks
Use an RFU adaptor (not supplied).

Si el TV o la videograbadora son de tipo monofónico, conecte sólo el enchufe blanco para audio tanto en la videocámara como en el TV o en la videograbadora. Con esta conexión, el sonido es monofónico.

Para conectar un televisor o una videograbadora sin tomas de entrada de audio/vídeo
Utilice un adaptador RFU (no suministrado).

Editing onto Another Tape

Edición en otra cinta

You can create your own video programme by editing with any other 8 mm, Hi8, VHS, S-VHS, VHSC, S-VHSC, or Betamax VCR that has video/audio inputs.

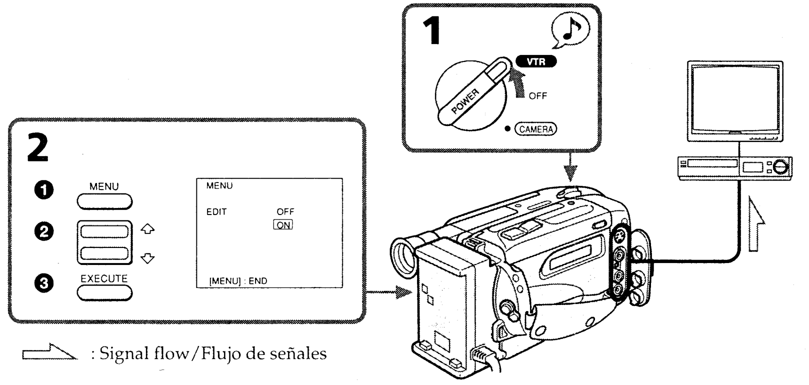
Before Editing

Connect the camcorder to the VCR using the supplied A/V connecting cable (p.47).
Set the input selector on the VCR to LINE, if available.
(1) Set the POWER switch to VTR.
(2) Set EDIT to ON in the menu system (p. 44).

Puede crear su propio programa de vídeo si realiza la edición con cualquier otra unidad de 8 mm, Hi8, VHS, S-VHS, VHSC, S-VHSC, o videograbadora Betamax que disponga de entradas de audio/vídeo.

Antes de editar

Conecte la videocámara a la videograbadora mediante el cable de conexión de A/V suministrado (p.47).
Ajuste el selector de entrada de la videograbadora en la posición LINE, si está disponible.
(1) Ajuste el conmutador POWER en la posición VTR.
(2) Ajuste EDIT en la posición ON en el sistema de menús (p. 44).



: Signal flow/Flujo de señales

See the next page for further information.

Consulte la página siguiente para obtener más información.

Editing onto Another Tape

Edición en otra cinta

Starting Editing

Turn down the volume of the camcorder while editing. Otherwise, picture distortion may occur.

(1) Insert a blank tape (or a tape you want to record over) into the VCR and insert your recorded tape into the camcorder.

(2) Play back the recorded tape on the camcorder until you locate the point where you want to start editing, then press **II** to put the camcorder in playback pause mode.

(3) On the VCR, locate the recording start point and put the VCR in recording pause mode.

(4) Press **II** on the camcorder and VCR simultaneously to start editing.

To Edit More Scenes

Repeat steps 2 to 4.

To Stop Editing

Press □ STOP on both the camcorder and VCR.

Use of the EDITSEARCH button

You can play back the tape in the normal/reverse direction by holding down EDITSEARCH during playback pause mode.

You can also play back still pictures successively at specific intervals by pressing EDITSEARCH intermittently.

Cómo iniciar la edición

Baje el volumen de la videocámara durante la edición. En caso contrario, puede distorsionarse la imagen.

(1) Inserte una cinta en blanco (o una previamente grabada que desee volver a grabar) en la videograbadora y la cinta grabada en la videocámara.

(2) Reproduzca la cinta grabada en la videocámara hasta que localice el punto desde el que desee iniciar la edición y, a continuación, pulse **II** para introducir el modo de pausa de reproducción en la videocámara.

(3) En la videograbadora, localice el punto de inicio de grabación e introduzca el modo de pausa de grabación.

(4) Pulse **II** en la videocámara y en la videograbadora simultáneamente para iniciar la edición.

Para editar más escenas

Repita los pasos de 2 a 4.

Para detener la edición

Pulse □ STOP en la videocámara y en la videograbadora.

Utilice el botón EDITSEARCH

Es posible reproducir la cinta en sentido normal e inverso; para ello, mantenga pulsado EDITSEARCH durante el modo de pausa de reproducción.

También puede reproducir imágenes sucesivamente a intervalos específicos mientras pulsa EDITSEARCH intermitentemente.

Recording from a VCR or TV

Grabación de la videograbadora o del TV

You can record a tape from another VCR or a TV programme from a TV that has video/audio outputs.

Connect the camcorder to the VCR or TV.

Turn down the volume of the camcorder while editing. Otherwise, the picture distortion may occur.

(1) Turn the POWER switch to VTR.

(2) Press REC ● and the button on the right together at the point where you want to start recording.

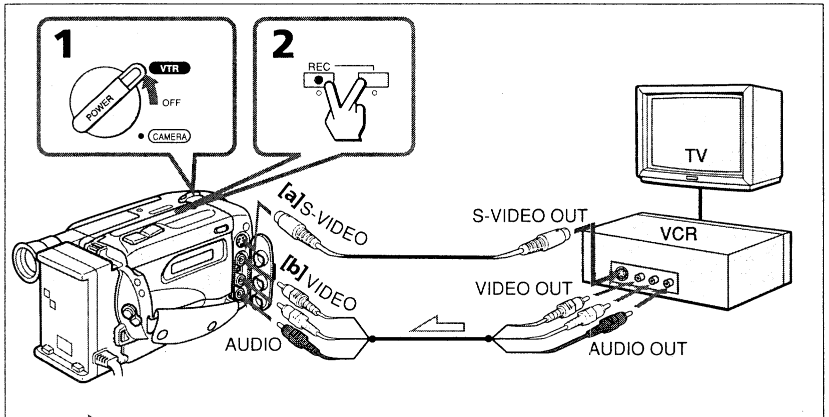
Es posible grabar una cinta desde otra videograbadora, o un programa de TV desde un TV que disponga de salidas de audio/vídeo.

Conecte la videocámara a la videograbadora o al TV.

Baje el volumen de la videocámara durante la edición. En caso contrario, puede distorsionarse la imagen.

(1) Ajuste el conmutador POWER en la posición VTR.

(2) Pulse REC ● y el botón de la derecha simultáneamente en el punto de inicio de grabación.



: Signal flow/Flujo de la señales

If you are going to connect the camcorder using the S video cable **[a]**, you do not need to connect the yellow (video) plug of the A/V connecting cable **[b]**.

If your TV or VCR is a monaural type, connect only the white plug for audio on both the camcorder and the TV or the VCR. With this connection, the sound is monaural.

To Stop Recording

Press □.

Monitoring the Picture from a TV or VCR

You can monitor the picture on the LCD screen or in the viewfinder. Connect the camcorder to the outputs on the TV or VCR.

Si va a conectar la videocámara mediante el cable S vídeo **[a]**, no es preciso conectar el enchufe amarillo (vídeo) del cable de conexión de A/V **[b]**.

Si el TV o la videograbadora son de tipo monofónico, conecte sólo el enchufe blanco para audio tanto en la videocámara como en el TV o en la videograbadora. Con esta conexión, el sonido es monofónico.

Para detener la grabación

Pulse □.

Control de la imagen de un TV o de una videograbadora

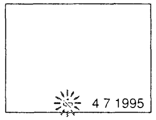
Es posible controlar la imagen en la pantalla LCD o en el visor electrónico. Conecte la videocámara a las tomas de salida del televisor o de la videograbadora.

Changing the Lithium Battery in the Camcorder

Cambio de la pila de litio de la videocámara

Your camcorder is supplied with the lithium battery installed. When the battery becomes weak or dead, 🔋 indicator flashes in the viewfinder or on the LCD screen for about 5 seconds when you set the POWER switch to CAMERA. In this case, **replace the battery with the Sony CR2025 o Duracell DL-2025 lithium battery. Use of any other battery may present a risk of fire or explosion.**
The lithium battery for the camcorder lasts for about 1 year under normal operation. However, the lithium battery installed at the factory may not last 1 year.

La videocámara se suministra con la pila de litio instalada. Cuando se debilite o se agote la pila, el indicador 🔋 parpadeará en el visor electrónico o en la pantalla LCD durante 5 segundos si ajusta el conmutador POWER en la posición CAMERA. En este caso, **sustitúyala por la pila de litio CR2025 Sony o Duracell DL-2025. El uso de cualquier otro tipo de pila puede representar un riesgo de incendio o explosión.**
Esta pila dura 1 año aproximadamente en condiciones normales de uso. No obstante, es posible que la pila de litio instalada de fábrica no dure 1 año.

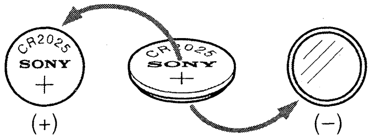


Note on Lithium Battery

The lithium battery has a positive (+) and a negative (–) side as illustrated.
Be sure to insert the lithium battery with the positive side facing out.

Nota sobre la pila de litio

La pila de litio tiene un polo positivo (+) y uno negativo (–) como se muestra en la ilustración.
Compruebe que al insertar la pila de litio, el polo positivo quede hacia fuera.



WARNING
The battery may explode if mistreated. Do not recharge, disassemble, or dispose of in fire.

Caution
Keep the lithium battery out of the reach of children. Should the battery be swallowed, consult a doctor immediately.

ADVERTENCIA
La pila puede explotar si la expone a condiciones inadecuadas. No la recargue, ni la deseche en el fuego.

Precaución
Mantenga alejada la pila de litio del alcance de los niños. En caso de ingestión de la pila, consulte al médico inmediatamente.

Changing the Lithium Battery

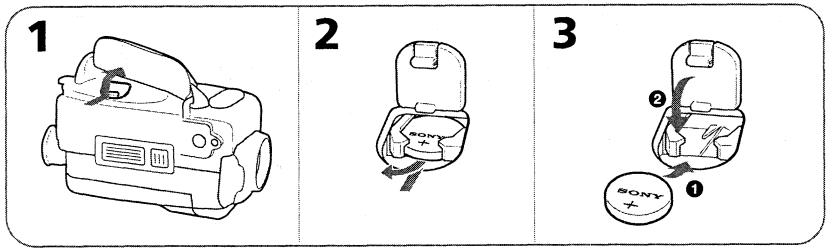
When replacing the lithium battery, keep the battery pack or other power source attached. Otherwise, you will need to reset the date, time and the other items marked with * on pages 43 and 44.

(1) Open the lid of the lithium battery compartment under the grip strap of the camcorder.
(2) Push the battery down once and pull it out from the holder.
(3) Install the lithium battery with the positive (+) side facing out. Close the lid of the battery compartment.

Cambio de la pila de litio

Al sustituir la pila de litio, mantenga conectada la batería u otra fuente de alimentación. En caso contrario, será preciso volver a ajustar la fecha, la hora y otros elementos marcados con * en las páginas 43 y 44.

(1) Abra la tapa del compartimiento de la pila de litio situada debajo de la correa de la empuñadura de la videocámara.
(2) Empuje la pila hacia abajo una vez y tire de ésta para sacarla del soporte.
(3) Instale la pila de litio con el polo positivo (+) hacia fuera. Cierre la tapa del compartimiento de la pila.



Resetting the Date and Time

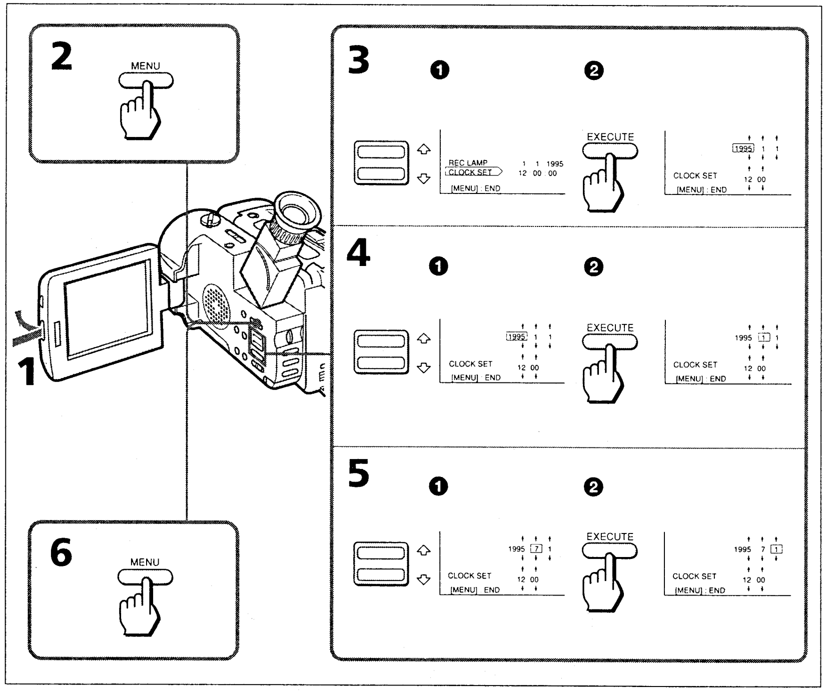
Reajuste de la fecha y hora

You can reset the date and time in the menu system in CAMERA mode.

(1) While pressing PUSH OPEN, open the LCD panel.
(2) Press MENU to display the menu on the LCD screen.
(3) Press ↑ or ↓ to select CLOCK SET, then press EXECUTE.
(4) Press ↑ or ↓ to adjust the year, and then press EXECUTE..
(5) In the same way as for the year, adjust the month, day, hour and minutes using ↑, ↓ and EXECUTE.
Note that when you hold down ↑ or ↓, the indications in the menu display advance faster.
(6) Press MENU to erase the menu display.

Es posible reajustar la fecha y la hora en el sistema de menús del modo CAMERA.

(1) Mientras pulsa PUSH OPEN, abra el panel LCD.
(2) Pulse MENU para visualizar el menú en la pantalla LCD.
(3) Pulse ↑ o ↓ para seleccionar CLOCK SET y, a continuación, pulse EXECUTE.
(4) Pulse ↑ o ↓ para ajustar el año y, a continuación, pulse EXECUTE.
(5) Al igual que para ajustar el año, ajuste el mes, día, hora y minutos mediante ↑ o ↓ y EXECUTE.
Observe que mientras mantiene pulsado ↑ o ↓, las indicaciones de la pantalla de menú avanzan con mayor rapidez.
(6) Pulse MENU para borrar la pantalla de menú.



To Correct the Date and Time Setting

Repeat steps 4 to 5.

Para corregir el ajuste de fecha y hora

Repita los pasos de 4 a 5.

To Check the Date and Time

Press DATE to display the date indicator.
Press TIME to display the time indicator. When you press the same button again, the indicator goes out.

Note on the setting of the year

When you set the year, each time you press ↑ or ↓, the digits change as follows:

1995 ←→ 1996 ←······→ 2025

Note on the time indicator

The internal clock of the camcorder operates on a 24-hour cycle.

Para comprobar la fecha y la hora

Pulse DATE para mostrar el indicador de fecha.
Pulse TIME para mostrar el indicador de hora. Si pulsa de nuevo el mismo botón, el indicador se apaga.

Nota sobre el ajuste del año

Cuando ajuste al año, cada vez que pulse ↑ o ↓, los dígitos cambiarán como se indica a continuación:

1995 ←→ 1996 ←······→ 2025

Nota sobre el indicador de hora

El reloj interno de la videocámara utiliza el sistema de 24 horas.

Playback Modes

Modos de reproducción

Selecting Cassette Types

This Hi8 system is an extension of the standard 8 mm system, and was developed for higher-quality pictures.
You can use Hi8 video and standard 8 mm cassettes. When you want to record in the Hi8 system, use only Hi8 video cassettes. You cannot record on standard 8 mm cassettes in the Hi8 system.
If you are going to play back the tape using a standard 8 mm video recorder/player, you should record in the standard 8 mm tape.

To play back in	Recording using cassette type
Hi8	Hi8
Standard 8	8

Selección de tipos de cintas

Este sistema Hi8 es una extensión del sistema estándar de 8 mm y se desarrolló para imágenes de mayor calidad.
Es posible utilizar cintas de vídeo Hi8 y estándar de 8 mm. Cuando desee grabar en el sistema Hi8, utilice sólo cintas de vídeo Hi8. No es posible videofilmar con cintas estándar de 8 mm en el sistema Hi8.
Si va a reproducir la cinta con una videograbadora/videoreproductor estándar de 8 mm, es preciso filmar con una cinta estándar de 8 mm.

Para reproducir en el sistema	Grabe utilizando el tipo de cinta
Hi8	Hi8
Standard 8	8

Playback Modes

When You Play Back

The playback mode (SP or LP) is selected automatically according to the format in which the tape has been recorded. The quality of the recorded picture in LP mode, however, will not be as good as that in SP mode.

Notes on AFM Hi-Fi stereo

When you play back the tape, the sound is in monaural if:

- You record the tape using this camcorder, then play it back on an AFM Hi-Fi monaural video recorder/player.
- You record the tape on an AFM Hi-Fi monaural video recorder, then play it back on this camcorder.

LP (long play) mode

When you play back a tape recorded in LP mode, the LP indicator lights up in the viewfinder or on the LCD screen.

Foreign 8 mm video

You cannot play software recorded on a different TV colour system. Because the TV colour systems differ from country to country, you may not be able to play back foreign prerecorded software. Refer to page 67 to check the TV colour system of foreign countries.

Modos de reproducción

Reproducción

El modo de reproducción (SP o LP) se selecciona automáticamente de acuerdo con el formato de grabación de la cinta. No obstante, la calidad de la imagen grabada en el modo LP no será tan alta como la del modo SP.

Notas sobre el sistema estéreo AFM Hi-Fi

Al reproducir la cinta, el sonido recibido será monofónico si:

- Graba la cinta utilizando esta videocámara y, a continuación, la reproduce en una videograbadora/videoreproductor AFM Hi-Fi monofónico.
- Graba la cinta en una videograbadora AFM Hi-Fi monofónica y, a continuación, la reproduce en esta videocámara.

Modo LP (larga duración)

Al reproducir una cinta grabada en el modo LP, el indicador se ilumina en el visor electrónico o en la pantalla LCD.

Vídeo de 8 mm extranjero

No es posible reproducir software grabado en un sistema de color de TV diferente. Como los sistemas de color de TV varían en función de los países, no será posible reproducir software previamente grabado en el extranjero. Consulte la página 67 para comprobar los sistemas de color de TV de países extranjeros.

Tips for Using the Battery Pack

This section shows you how you can get the most out of your battery pack.

Preparing the Battery Pack

Always Carry Additional Batteries

Have sufficient battery pack power to do 2 to 3 times as much recording as you have planned.

Battery Life is Shorter in Cold Environment

Battery efficiency is decreased and the battery will be used up more quickly if you are recording in cold environment.

To Save Battery Power

Turn the STANDBY switch on the camcorder down when not recording to save battery power. A smooth transition between scenes can be made even if recording is stopped and started again. While you are positioning the subject, selecting an angle, or looking through the viewfinder lens or on the LCD screen, the lens moves automatically and the battery is used. The battery is also used when a tape is inserted or removed.

Consejos para el uso de la batería

En esta sección se explica cómo rentabilizar al máximo la batería.

Preparación de la batería

Lleve siempre consigo pilas adicionales

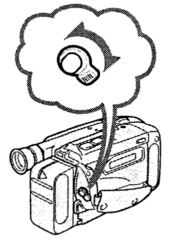
Disponga siempre de suficiente batería para grabar el doble o el triple del tiempo planeado.

La duración de la batería es menor a bajas temperaturas

La eficacia de la batería disminuye y se agotará con mayor rapidez si realiza la grabación a bajas temperaturas.

Para ahorrar batería

Gire el selector STANDBY de la videocámara hacia abajo cuando no esté grabando para ahorrar batería.
Es posible realizar una transición uniforme entre escenas si detiene y vuelve a iniciar la grabación. Mientras coloca el objeto, selecciona un ángulo o mira a través del objetivo del visor electrónico o la pantalla LCD, el objetivo se mueve automáticamente y se utiliza batería. También se emplea batería al insertar o extraer una cinta.



Tips for Using the Battery Pack

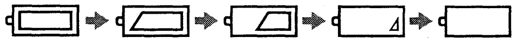
When to Replace the Battery Pack

While you are using your camcorder, the remaining battery indicator in the viewfinder or on the LCD screen decreases gradually as battery power is used up.

Consejos para el uso de la batería

Cuándo sustituir la batería

Mientras utiliza la videocámara, el indicador de batería restante del visor electrónico o de la pantalla LCD se apaga gradualmente cuando se está agotando la batería.



When the remaining battery indicator reaches the lowest point, the ▭ indicator appears and starts flashing in the viewfinder or on the LCD screen. **[a]** on the next page
When the ▭ indicator in the viewfinder changes from slow flashing to rapid flashing while you are recording, turn the POWER switch to OFF on the camcorder and replace the battery pack. Leave the tape in the camcorder to obtain smooth transition between scenes after the battery pack is replaced.

Note on the remaining battery indicator

The remaining battery indicator of the camcorder may indicate a different remaining capacity from that of the battery pack with its own indicator (not supplied). The indicator on the battery pack is more accurate.

Notes on the Rechargeable Battery Pack

The Battery Pack Heats Up

During charging or recording, the battery pack heats up. This is caused by energy that has been generated and a chemical change that has occurred inside the battery pack. This is not cause for concern.

Cuando el indicador de batería restante alcanza el punto más bajo, el indicador ▭ aparece y comienza a parpadear en el visor electrónico o en la pantalla LCD. **[a]** en la página siguiente
Cuando el indicador ▭ del visor electrónico cambia de un parpadeo lento a uno rápido mientras está grabando, deslice el conmutador POWER a la posición OFF de la videocámara y sustituya la batería. Deje la cinta en la videocámara para obtener una transición uniforme entre escenas después de sustituir la batería.

Nota sobre el indicador de batería restante

El indicador de batería restante de la videocámara puede indicar una capacidad restante distinta de la de la batería con su propio indicador (no suministrado). El indicador de la batería es más preciso.

Notas sobre la batería recargable

La batería se calienta

Durante la carga o la grabación, la batería se calienta. Esto se debe a la energía generada y al cambio químico que se ha producido en el interior de la batería. No es causa de preocupación.

Battery Pack Care

- **Remove the battery pack from the camcorder after using the battery pack,** and keep it in a cool place. When the battery pack is attached to the camcorder, a small amount of current flows to the camcorder even if the POWER switch is set to OFF, which shortens battery life.
- The battery pack is always discharging even when it is not in use after charging. Therefore, you should charge the battery right before using the camcorder.

How to Use the Switch on the Battery Pack

This switch is provided so that you can mark the charged battery pack. Set the switch to the "no mark" position when charging is completed. Set the switch to the "red mark" position when the battery is used up (or in whichever direction you want to remind yourself). **[b]**

The Life of the Battery Pack

If the ▭ indicator flashes rapidly just after turning on the camcorder with a fully charged battery pack, the battery pack should be replaced with a new fully charged one.

Charging Temperature

You should charge batteries at temperatures from 10°C to 30°C (from 50°F to 86°F). Lower temperatures require a longer charging time.

Cuidado de la batería

- **Retire la batería de la videocámara después de utilizar la batería** y consérvela en un lugar fresco. Al instalar la batería en la videocámara, una pequeña cantidad de corriente fluye por la videocámara aunque el conmutador POWER se encuentre en la posición OFF, y ello reduce la duración de la batería.
- La batería siempre está en proceso de descarga, aunque no se utilice después de cargarla. De este modo, se recomienda cargar la batería inmediatamente antes de utilizar la videocámara.

Cómo utilizar el selector con la batería

Este selector se proporciona para marcar la batería cargada. Ajuste el selector en la posición "no mark" cuando haya terminado la carga y ajústelo en la posición "red mark" cuando la batería esté agotada (o en el sentido que sea más fácil de recordar). **[b]**

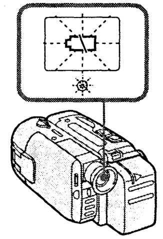
Duración de la batería

Si el indicador ▭ parpadea con rapidez inmediatamente después de activar la videocámara, será preciso sustituir la batería por una nueva completamente cargada.

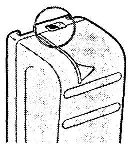
Temperatura de carga

Se recomienda cargar la batería a una temperatura entre 10°C y 30°C (entre 50°F y 86°F). A temperaturas inferiores, la duración de carga es mayor.

[a]



[b]



Tips for Using the Battery Pack

Notes on Charging

A Brand-new Battery Pack

A brand-new battery pack is not charged. Before using the battery pack, charge it completely.

Before Recharging a Used Battery Pack

- Make sure to use up the battery before recharging.
- If recording is completed before the 🔋 indicator appears in the viewfinder or on the LCD screen, you should remove the tape, turn the POWER switch to CAMERA, turn STANDBY up, and leave the camcorder until the battery indicator flashes rapidly.
- **Charging the usable battery causes a lowering of battery capacity. Battery capacity can be recovered if you fully discharge and charge the battery pack again.**

After Long Storage

Recharge the battery pack after a long period of storage. If the battery pack is charged fully but not used for a long time (about 1 year), it becomes discharged. Charge it again, but in this case the battery life will be shorter than normal. After several charging and discharging cycles, the battery life will recover its original capacity.

Notes on the Terminals

If the terminals (metal parts on the back) are not clean, the battery duration will be shortened.

When the terminals are not clean or when the battery pack has not been used for a long time, repeatedly install and remove the battery pack. This improves the contact condition. Also, wipe the + and – terminals with a soft cloth or paper.

Consejos para el uso de la batería

Notas sobre la carga

Batería completamente nueva

Una batería nueva no está cargada, de forma que antes de utilizarla, es preciso cargarla completamente.

Antes de recargar un batería usada

- Asegúrese de que la batería está completamente agotada antes de cargarla de nuevo.
- Si ha terminado de grabar antes de que el indicador 🔋 aparezca en el visor electrónico o en la pantalla LCD, deberá retirar la cinta, deslizar el conmutador POWER a la posición CAMERA, girar STANDBY hacia arriba y no utilizar la videocámara hasta que el indicador de batería parpadee rápidamente.
- **Al cargar la batería usada, disminuye la capacidad de ésta, y puede recuperarse si descarga la batería completamente y vuelve a cargarla.**

Si ha almacenado la batería durante mucho tiempo

Recargue la batería después de un largo periodo de almacenamiento. Si no se utiliza una batería completamente cargada durante un largo periodo de tiempo (1 año aproximadamente), se descargará. Vuelva a cargarla, pero en este caso, la duración de la batería será menor de lo habitual. Después de varios ciclos de carga y descarga, la batería recuperará su capacidad original.

Notas sobre los terminales

Silos terminales (piezas de metal situadas en la parte posterior) no están limpias, la duración de la batería será menor.

Si los terminales no están limpios o si no se ha utilizado la batería durante un largo periodo de tiempo, instale y retire la batería varias veces. De esta forma mejorará la toma de contacto. Asimismo, limpie los terminales + y – con un paño o trozo de papel suaves.

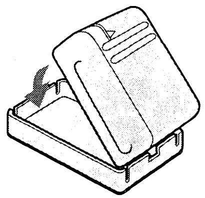
Be Sure to Observe the Following

- To prevent an accident caused by a short circuit, do not allow metal objects such as necklace to touch the battery terminals. When carrying the battery pack, attach the terminal cover. **[c]**
- Keep the battery pack away from fire.
- Keep the battery pack dry.
- Do not open nor convert the battery pack.
- Do not expose the battery pack to any mechanical shock.

Observe las siguientes indicaciones

- Para evitar que se produzcan accidentes derivados de cortocircuitos, no permite que entren en contacto objetos de metal, como un collar, con los terminales de la batería. Cuando transporte la batería, ajuste la cubierta de terminales. **[c]**
- Mantenga la batería alejada del fuego.
- Mantenga la batería seca.
- No abra ni modifique la batería.
- No exponga la batería a golpes mecánicos.

[c]



Maintenance Information and Precautions

Moisture Condensation

If the camcorder is brought directly from a cold place to a warm place, moisture may condense inside the camcorder, on the surface of the tape, or on the lens. In this condition, the tape may stick to the head drum and be damaged or the camcorder may not operate correctly. To prevent possible damage under these circumstances, the camcorder is furnished with moisture sensors. However, take the following precautions.

Información sobre mantenimiento y precauciones

Condensación de humedad

Si traslada la videocámara directamente de un lugar frío a uno cálido, puede condensarse humedad en el interior de la misma, en la superficie de la cinta o en el objetivo. De este modo, la cinta puede pegarse al tambor del cabezal y dañarse, o la videocámara puede no funcionar correctamente. Para evitar que se produzcan posibles daños bajo estas circunstancias, la videocámara dispone de sensores de humedad. No obstante, tome las siguientes precauciones.

Maintenance Information and Precautions

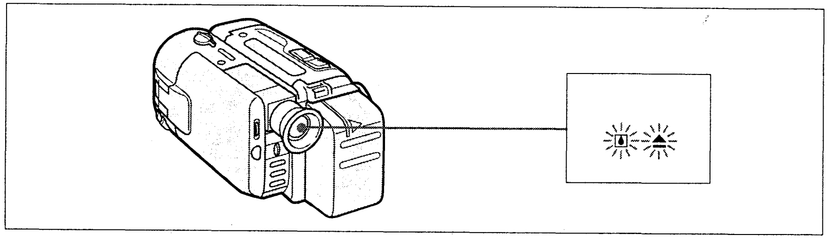
Información sobre mantenimiento y precauciones

Inside the Camcorder

When ▣ and ⏏ indicators flash in the viewfinder or on the LCD screen, moisture has condensed inside the camcorder.
If this happens, no other functions except for tape ejection will work.
Eject the tape, turn off the camcorder, and leave it with the cassette holder open for at least one hour.
The camcorder can be used again if the ▣ indicator does not appear when the power is turned on again.

Interior de la videocámara

Cuando los indicadores ▣ y ⏏ parpadean en el visor electrónico o en la pantalla LCD, significa que se ha condensado humedad en el interior de la videocámara.
Si esto ocurre, no se activará ninguna función, excepto la de expulsión de cinta.
Extraiga la cinta, desactive la videocámara y deje el portacassettes abierto durante al menos una hora.
La videocámara puede volver a utilizarse si el indicador ▣ no se ilumina al volver a activar la alimentación.



On the Surface of the Tape

If there is moisture on the surface of the tape, when you insert cassette and press a tape transport button (▷PLAY, etc.), the ⏏ indicator in the viewfinder or on the LCD screen flashes.
In this case, no other functions except for tape ejection will work.
Eject the tape, turn off the camcorder and leave it with the cassette holder open for at least one hour.
The camcorder can be used again if the ⏏ indicator does not appear when you insert the cassette and press one of the tape transport button.

On the Lens

If moisture condenses on the lens, no indicator appears, but the picture becomes dim. Turn off the power and do not use the camcorder for about one hour.

Superficie de la cinta

Si se condensa humedad en la superficie de la cinta, al insertar el cassette y pulsar un botón de transporte de cinta (▷PLAY, etc.), parpadeará el indicador ⏏ en el visor
electrónico o en la pantalla LCD.
En este caso, no se activará ninguna función, excepto la de expulsión de cinta.
Extraiga la cinta, desactive la videocámara y deje el portacassettes abierto durante al menos una hora.
La videocámara puede volver a utilizarse si el indicador ⏏ no se ilumina al insertar el cassette y pulsar uno de los botones de transporte de cinta.

Objetivo

Si se condensa humedad en el objetivo, no aparece ningún indicador, pero la imagen se atenúa. Desactive la alimentación y no utilice la videocámara durante al menos una hora.

How to Prevent Moisture Condensation

When bringing the camcorder from a cold place to a warm place, put the camcorder in a plastic bag and allow it to adapt to room conditions over a period of time.

(1) Be sure to tightly seal the plastic bag containing the camcorder.

(2) Remove the bag when the air temperature inside it has reached the temperature surrounding it (after about 1 hour).

Cómo prevenir la condensación de humedad

Si transporta la videocámara de un lugar frío a uno cálido, colóquela en una bolsa de plástico y deje que se adapte a las condiciones de la habitación.

(1) Compruebe que la bolsa de plástico que contiene la videocámara esté bien sellada.

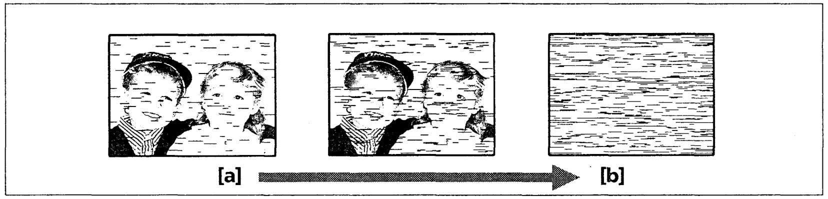
(2) Retire la bolsa cuando la temperatura del aire del interior haya alcanzado la temperatura ambiente (después de una hora aproximadamente).

Video Head Cleaning

To ensure normal recording and clear pictures, clean the video heads. When the ⊗ indicator and "▭ CLEANING CASSETTE" message appear one after another in the viewfinder or on the LCD screen or playback pictures are "noisy" or hardly visible, the video heads may be dirty.

Limpieza de los cabezales de vídeo

Para garantizar que la grabación se realice normalmente y se obtenga imágenes claras, limpie los cabezales de vídeo. Cuando el indicador ⊗ y el mensaje "▭ CLEANING CASSETTE" aparecen uno después del otro en el visor electrónico o en la pantalla LCD, o las imágenes de reproducción producen "ruido" o no se ven con claridad, es posible que los cabezales de vídeo estén sucios.



[a] Slightly dirty
[b] Very dirty

If this happens, clean the video heads with the Sony V8-25CLH cleaning cassette (not supplied). After checking the picture, if it is still "noisy", repeat the cleaning. (Do not repeat cleaning more than 5 times.)

Caution
Do not use a commercially available wet-type cleaning cassette. It may damage the video heads.

Note
If the V8-25CLH cleaning cassette is not available in your area, consult your nearest Sony dealer.

[a] Ligeramente sucios
[b] Muy sucios

Si esto ocurre, limpie los cabezales de vídeo con el cassette limpiador V8-25CLH Sony (no suministrado). Después de comprobar la imagen, si todavía contiene ruido, repita la limpieza. (No repita la limpieza más de 5 veces.)

Precaución
No utilice un cassette limpiador de tipo húmedo que puede adquirirse en tiendas del ramo, ya que puede dañar los cabezales de vídeo.

Nota
Si el cassette limpiador V8-25CLH Sony no está disponible en su zona, consulte al proveedor Sony más cercano.

Maintenance Information and Precautions

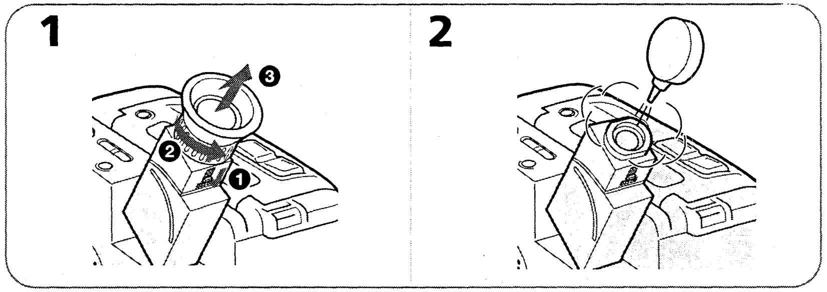
Información sobre mantenimiento y precauciones

Removing Dust from Inside the Viewfinder

(1) While holding down RELEASE on the viewfinder barrel, turn the eyecup in the direction of the arrow and pull it out.
(2) Clean the surface with a commercially available blower.

Como retirar el polvo del interior del visor electrónico

(1) Mientras mantiene pulsado RELEASE en el barrilete del visor electrónico, gire el ocular en el sentido de la flecha y tire del mismo.
(2) Limpie la superficie con un soplador disponible en tiendas del ramo.

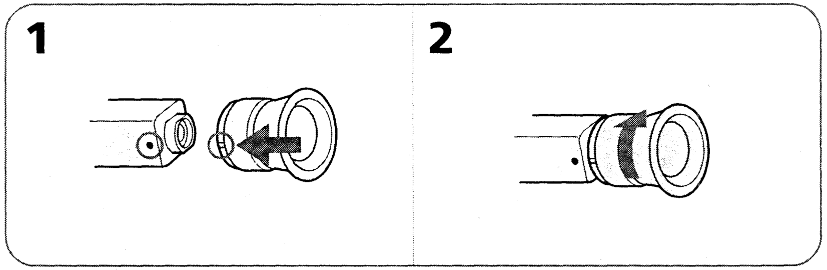


To Reattach the Eyecup

(1) Align the groove on the eyecup with the • mark on the barrel.
(2) Turn the eyecup clockwise.

Para volver a ajustar el ocular

(1) Alinee la hendidura del ocular con la marca • del barrilete.
(2) Gire el ocular en el sentido de las agujas del reloj.



Precautions

Camcorder Operation

- Operate the camcorder using 6.0 V (battery pack) or 7.5 V (AC power adaptor).
- For DC or AC operation, use only the accessories recommended in this manual.
- Should any solid object or liquid get inside the casing, unplug the camcorder and have it checked by your nearest Sony dealer before operating it any further.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the POWER switch set to OFF when not using the camcorder.
- Do not wrap up the camcorder and operate it since heat may build up internally.
- Keep the camcorder away from strong magnetic fields or mechanical vibration.
- Do not push the LCD screen.
- If the camcorder is used in a cold place, a residual image may appear on the LCD screen. This is not a malfunction.
- While using the camcorder, the back of the LCD screen may heat up. This is not a malfunction.
- Constant bright points of light (red, blue, or green) may appear on the LCD screen. This is not a malfunction.

On Handling Tapes

Do not insert anything in the small holes on the rear of the cassette. These holes are used to sense the type and thickness of tape, or if the tab is out or in.

Camcorder Care

- When the camcorder is not to be used for a long time, disconnect the power source and remove the tape. Periodically turn on the power, operate the camera and player sections and play back a tape for about 3 minutes.
- Clean the lens with a soft brush to remove dust. If there are fingerprints on the lens, remove them with a soft cloth.
- Clean the camcorder body with a soft dry cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.
- Clean the LCD screen with the supplied LCD screen cleaner cloth to remove fingerprints.

Precauciones

Funcionamiento de la videocámara

- Alimente la videocámara con 6,0 V (batería) o con 7,5 V (adaptador de alimentación de CA).
- Para alimentar la videocámara con CC o CA, utilice sólo los accesorios recomendados en este manual.
- Si cae algún objeto sólido o se vierte líquido en el interior de la unidad, desenchúfela y haga que sea revisada por su proveedor Sony antes de utilizarla de nuevo.
- Evite exponer la videocámara a un trato inadecuado, así como a golpes mecánicos. Sea especialmente cuidadoso con el objetivo.
- Mantenga el conmutador POWER en la posición OFF cuando no utilice la videocámara.
- No envuelva la videocámara para utilizarla, ya que puede calentarse internamente.
- Mantenga la videocámara alejada de campos magnéticos intensos o de vibraciones mecánicas.
- No ejerza presión sobre la pantalla LCD.
- Si emplea la videocámara en un lugar frío, puede aparecer una imagen residual en la pantalla LCD. Esto no significa un funcionamiento incorrecto.
- Mientras utiliza la videocámara, es posible que la parte trasera de la pantalla LCD se caliente; esto no supone un funcionamiento defectuoso.
- La pantalla LCD puede presentar puntos de brillo permanentes (rojos, azules o verdes). Esto no significa un funcionamiento incorrecto.

Utilización de las cintas

No inserte ningún objeto en los pequeños orificios de la parte posterior del cassette. Estos orificios se emplean para detectar el tipo y el grosor de la cinta, o la posición de la lengüeta.

Cuidados de la videocámara

- Cuando no vaya a utilizar la videocámara durante un largo periodo de tiempo, desconecte la fuente de alimentación y retire la cinta. Active la alimentación periódicamente, utilice las secciones de la cámara y del reproductor y reproduzca una cinta durante 3 minutos aproximadamente.
- Limpie el objetivo con una escobilla suave para retirar el polvo. Si el objetivo tiene impresas huellas dactilares, límpielas con un paño suave.
- Limpie el cuerpo de la videocámara con un paño seco y suave, o con un paño suave ligeramente humedecido en una solución detergente poco concentrada. No emplee ningún tipo de disolvente, ya que podría dañar el acabado.
- Limpie la pantalla LCD con el paño limpiador específico suministrado, con el fin de borrar las huellas dactilares.

Maintenance Information and Precautions

AC Power Adaptor

Charging

- **Repeated charging while some capacity remains causes a lowering of battery capacity. However, the original battery capacity can be recovered if you use the battery completely and charge it fully again.**
- Charge the battery pack on a flat surface without vibration.
- The battery pack will be hot during charging. This is normal.

Others

- Unplug the unit from the wall outlet (mains) when not in use for a long time. To disconnect the cord (mains lead), pull it out by the plug. Never pull the cord itself.
- Do not operate the unit with a damaged cord or if the unit has been dropped or damaged.
- Do not bend the AC power cord (mains lead) forcibly, or put a heavy object on it. This will damage the cord and may cause a fire or an electrical shock.
- Be sure that nothing metallic comes into contact with the metal parts. If this happens, a short may occur and the unit may be damaged.
- Always keep the metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment because it will disturb AM reception and video operation.
- The unit becomes warm while in use. This is normal.
- Do not place the unit in locations that are:
  - Extremely hot or cold
  - Dusty or dirty
  - Very humid
  - Vibrating

If any difficulty should arise, unplug the unit and contact your nearest Sony dealer.

Información sobre mantenimiento y precauciones

Adaptador de alimentación de CA

Carga

- **Si se realiza el proceso de carga de la batería repetidamente sin que su capacidad se haya agotado completamente, se producirá una reducción de ésta. No obstante, la capacidad original de la batería puede recuperarse si la agota primero y, a continuación, vuelve a cargarla completamente.**
- Cargue la batería sobre una superficie plana sin vibraciones.
- La batería se calentará durante la carga. Esto es normal.

Otros

- Desenchufe la unidad de la toma mural (toma de alimentación) cuando no vaya a utilizarla durante varios días. Para desconectar el cable (conductor de alimentación), tire del enchufe, nunca del propio cable.
- No utilice la unidad con un cable dañado, ni si ésta ha sufrido una caída o se ha dañado.
- No doble el cable de alimentación de CA (conductor de alimentación) a la fuerza, ni coloque objetos pesados sobre el mismo, ya que puede dañarse el cable y producirse un incendio o un cortocircuito.
- Asegúrese de que ningún objeto metálico entra en contacto con las partes de metal. Si esto ocurre, puede producirse un cortocircuito que dañaría la unidad.
- Mantenga siempre limpios los contactos de metal.
- No desmonte la unidad.
- No exponga la unidad a golpes mecánicos y evite que sufra caídas.
- Cuando esté utilizando la unidad y, especialmente, durante el proceso de carga, manténgala alejada de receptores de AM y de equipos de vídeo, ya que puede distorsionar la recepción de AM y causar interferencias en el funcionamiento de vídeo.
- La unidad se calienta durante su uso. Esto es normal.
- No sitúe la unidad en lugares:
  - Extremadamente cálidos o fríos
  - Polvorientos o sucios
  - Muy húmedos
  - Que emitan vibraciones

Si se produce algún problema, desenchufe la unidad y póngase en contacto con el proveedor Sony más cercano.

Using Your Camcorder Abroad

Each country has its own electricity and TV colour systems. Before using your camcorder abroad, check the following points:

Power Sources

You can use your camcorder in any country with the supplied AC power adaptor within 110 V to 240 V AC, 50/60 Hz.

Difference in Colour Systems

This camcorder is a PAL system based camcorder. If you want to view the playback picture on a TV, it must be a PAL system based TV or a SECAM system-based TV with PAL-SECAM transcoder.
Check the following alphabetical list.

PAL system countries
Australia, Austria, Belgium, China, Denmark, Finland, Germany, Great Britain, Holland, Hong Kong, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system country
Brazil

PAL-N system countries
Argentina, Paraguay, Uruguay

NTSC system countries
Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

SECAM system countries
Bulgaria, Czech Republic, France, Guyana, Hungary, Iran, Iraq, Monaco, Poland, Russia, Slovak Republic, Ukraine, etc.

Uso de la videocámara en el extranjero

Cada país dispone de sus propio sistema de electricidad y de color de TV. Antes de utilizar la videocámara en el extranjero, compruebe los siguientes puntos:

Fuentes de alimentación

Es posible utilizar la videocámara en cualquier país con el adaptador de alimentación de CA suministrado (de 110 V a 240 V CA, 50/60 Hz).

Diferencia entre los sistemas de color

Esta videocámara está basada en el sistema PAL. Si desea visualizar la imagen de reproducción en un TV, debe utilizar un TV basado en el sistema PAL o uno basado en el sistema SECAM con un transcodificador PAL-SECAM.
Compruebe la siguiente lista alfabética.

Países que utilizan el sistema PAL
Alemania, Australia, Austria, Bélgica, China, Dinamarca, Finlandia, Gran Bretaña, Holanda, Hong Kong, Italia, Kuwait, Malasia, Nueva Zelanda, Noruega, Portugal, Singapur, España, Suecia, Suiza, Tailandia, etc.

País que utiliza el sistema PAL-M
Brasil

Sistemas que utilizan el sistema PAL-N
Argentina, Paraguay, Uruguay

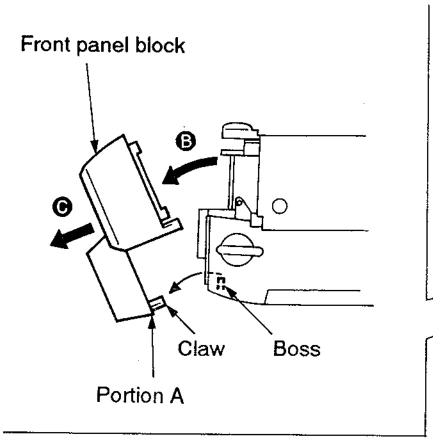
Países que utilizan el sistema NTSC
América central, Bolivia, Canadá, Chile, Colombia, Ecuador, EE.UU., Filipinas, Islas Bahamas, Jamaica, Japón, Corea, Méjico, Perú, Surinam, Taiwán, Venezuela, etc.

Países que utilizan el sistema SECAM
Bulgaria, Francia, Guayana, Hungría, Irán, Irak, Mónaco, Polonia, República checa, República eslovaca, Rusia, Ucrania, etc.

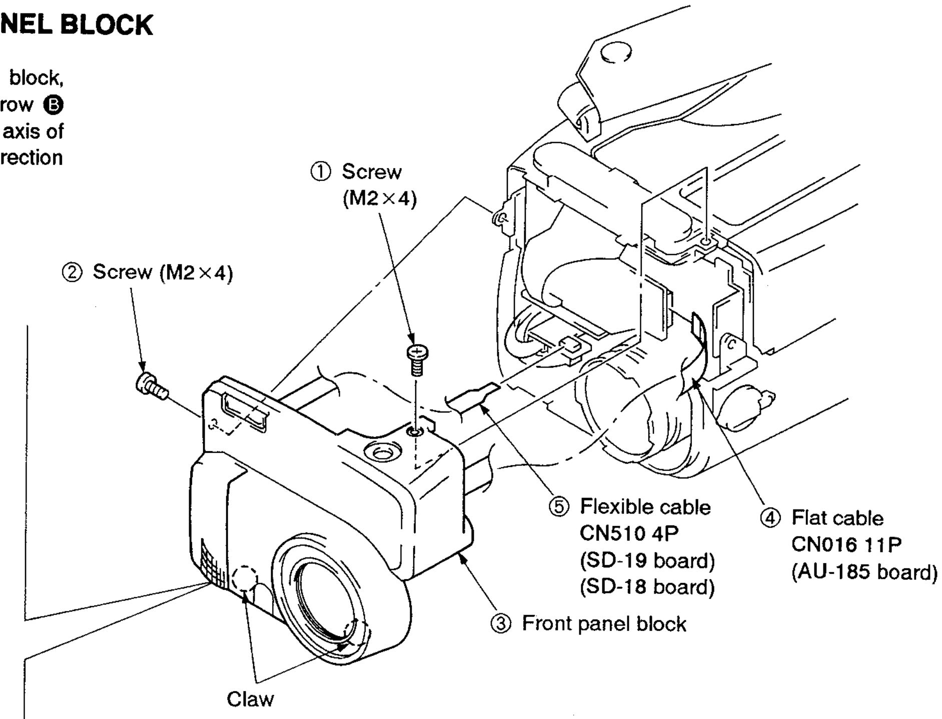
SECTION 2
DISASSEMBLY

2-1. REMOVAL OF FRONT PANEL BLOCK

Note: When removing the front panel block, turn it slowly in the direction of arrow Ⓑ until the claw is out of the boss on axis of portion A. Then pull it out in the direction of Ⓒ when the claw is out.

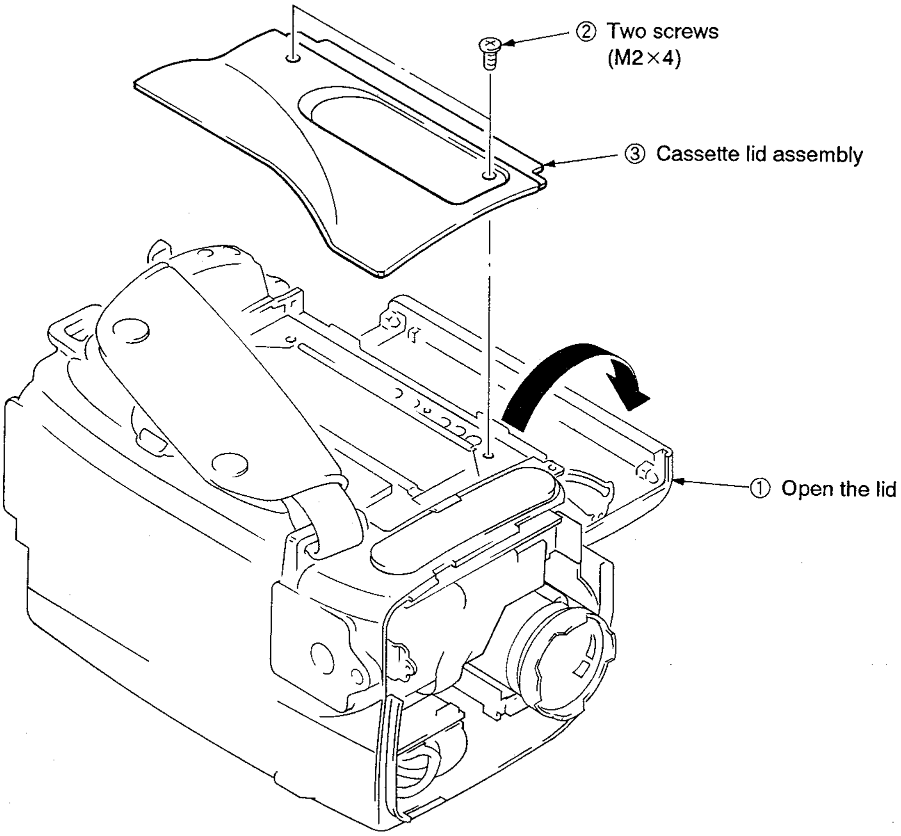


Front panel block
Ⓑ
Ⓒ
Claw
Boss
Portion A



① Screw (M2×4)
② Screw (M2×4)
⑤ Flexible cable CN510 4P (SD-19 board) (SD-18 board)
④ Flat cable CN016 11P (AU-185 board)
③ Front panel block
Claw

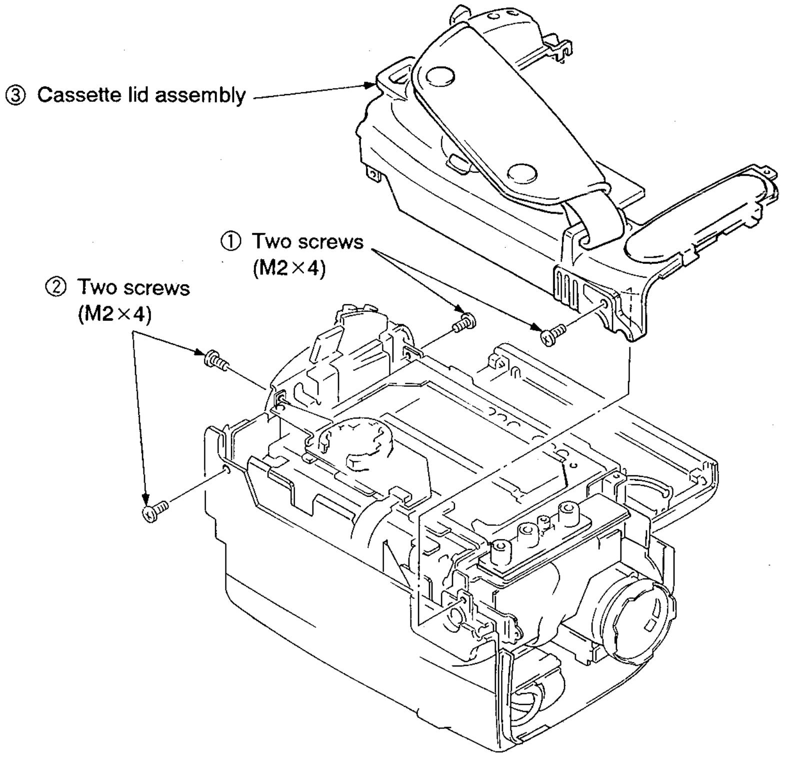
2-2. REMOVAL OF CASSETTE LID ASSEMBLY



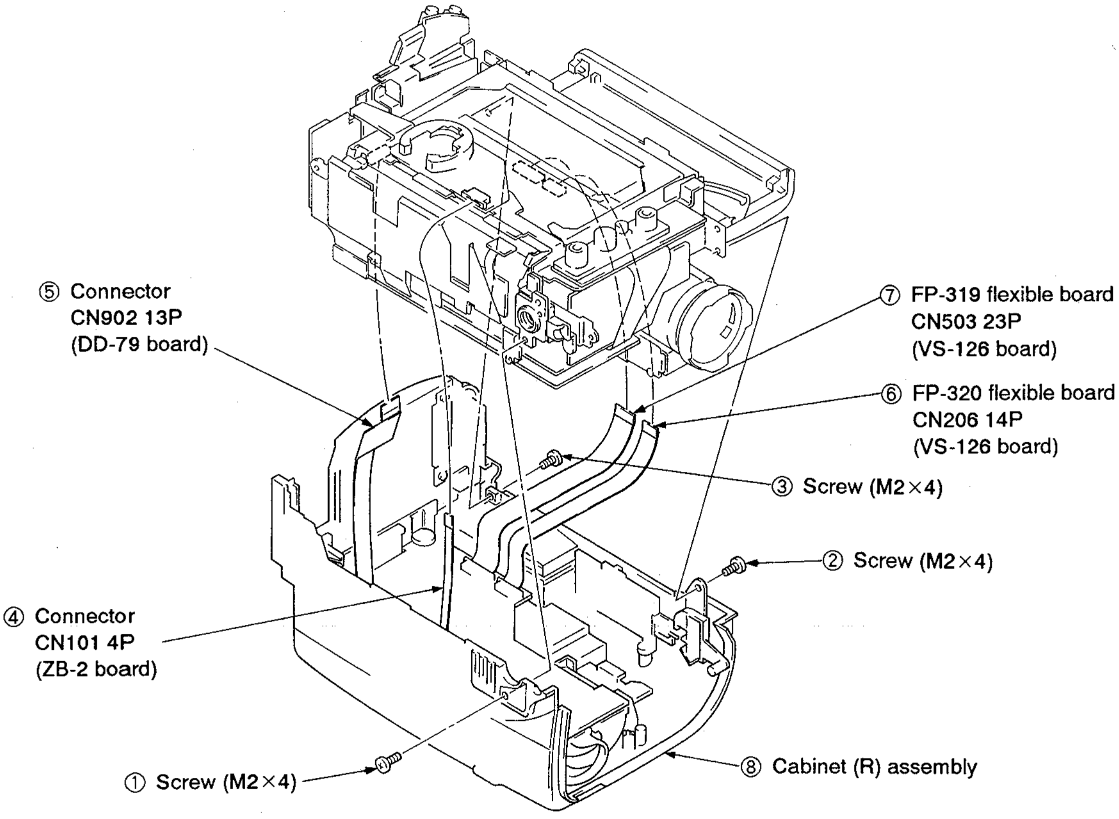
② Two screws (M2×4)
③ Cassette lid assembly
① Open the lid

2-3. REMOVAL OF CABINET (L) ASSEMBLY

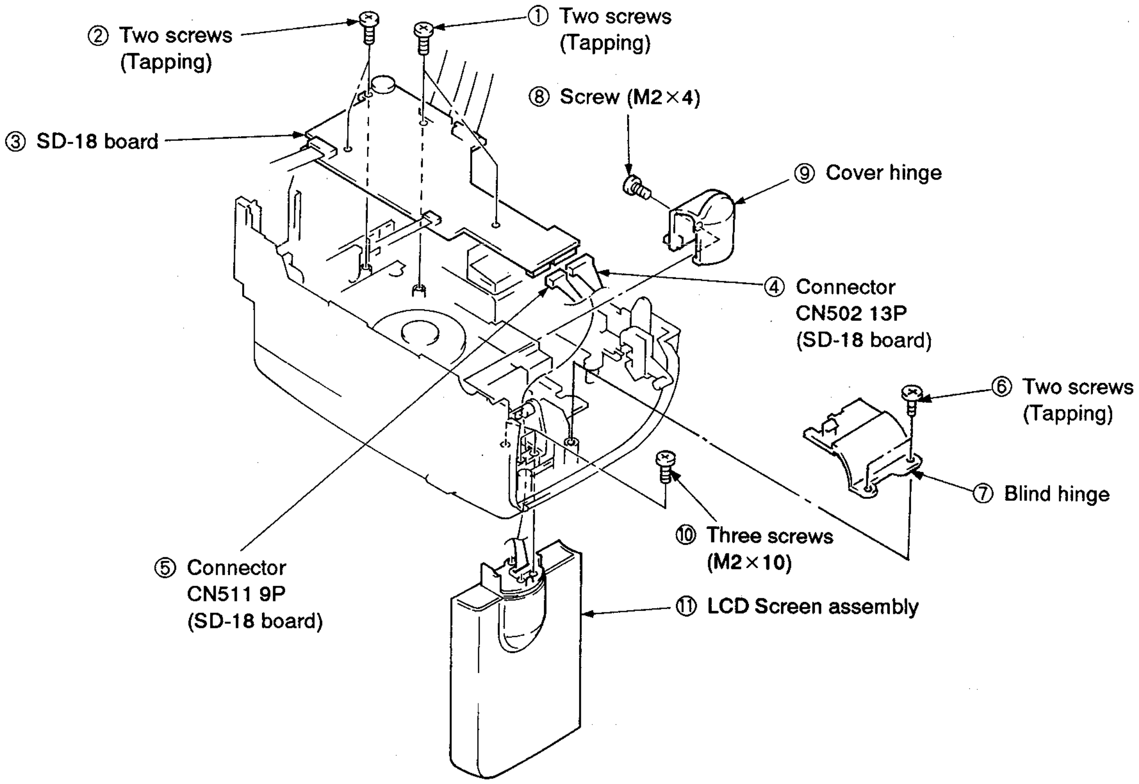
Note: When incorporating the cabinet (L) block assembly, be sure to remove the lithium battery first or the cabinet (L) will not fit properly.


③ Cassette lid assembly
① Two screws (M2×4)
② Two screws (M2×4)

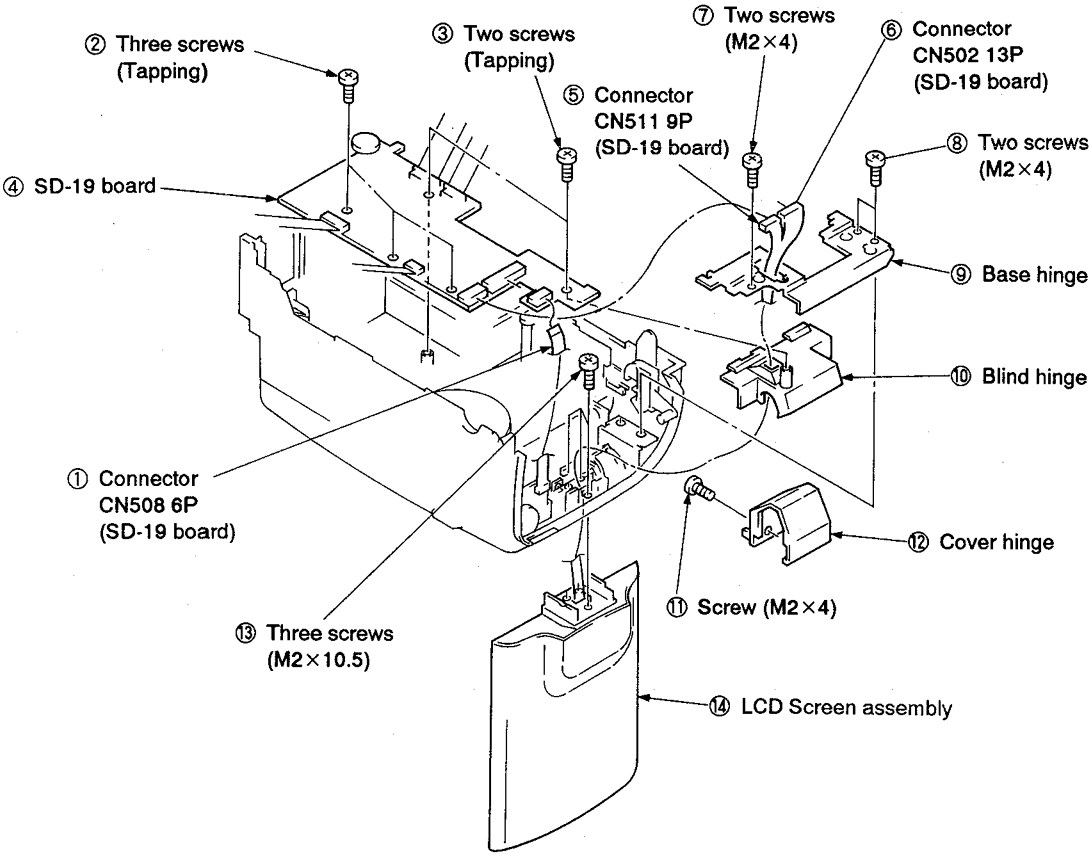
2-4. REMOVAL OF CABINET (R) ASSEMBLY


⑤ Connector CN902 13P (DD-79 board)
⑦ FP-319 flexible board CN503 23P (VS-126 board)
⑥ FP-320 flexible board CN206 14P (VS-126 board)
③ Screw (M2×4)
② Screw (M2×4)
④ Connector CN101 4P (ZB-2 board)
① Screw (M2×4)
⑧ Cabinet (R) assembly

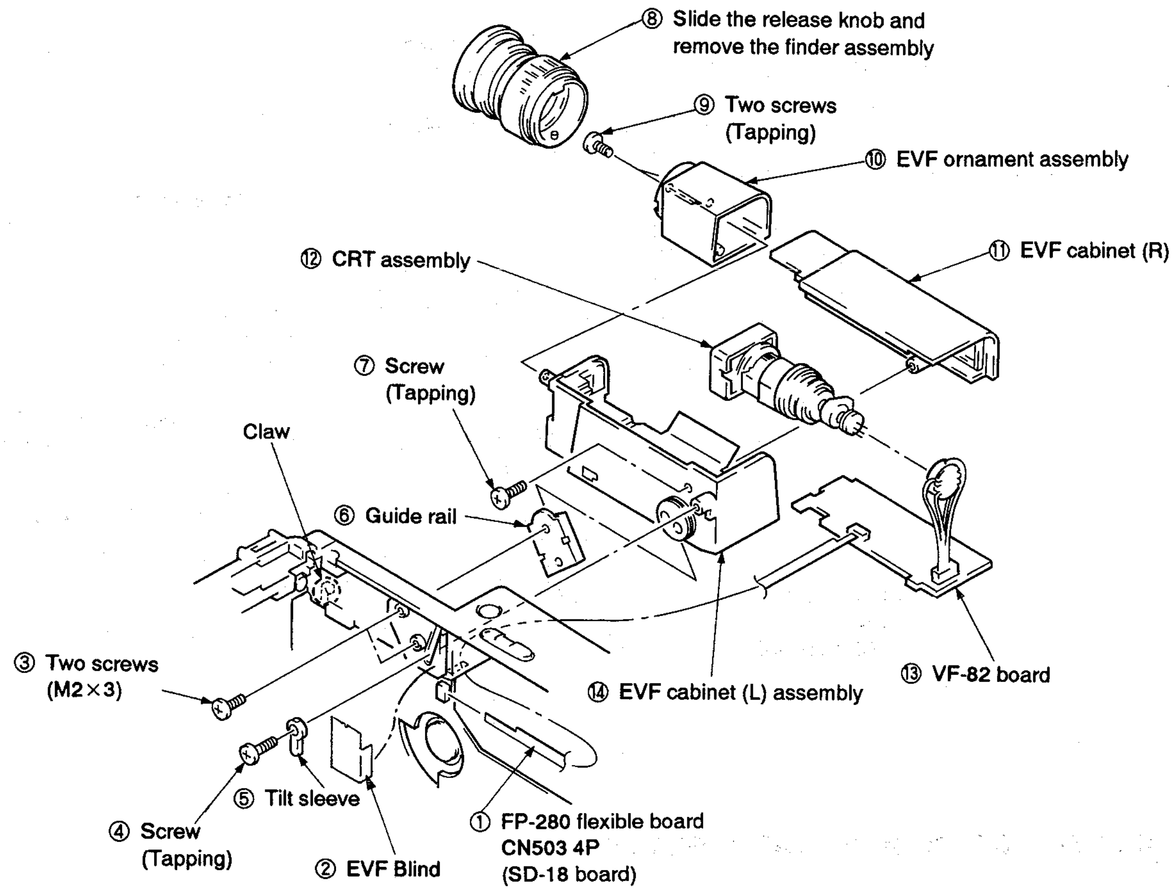
2-5. REMOVAL OF LCD SCREEN ASSEMBLY (3" LCD)


② Two screws (Tapping)
① Two screws (Tapping)
⑧ Screw (M2×4)
③ SD-18 board
⑨ Cover hinge
④ Connector CN502 13P (SD-18 board)
⑥ Two screws (Tapping)
⑦ Blind hinge
⑩ Three screws (M2×10)
⑤ Connector CN511 9P (SD-18 board)
⑪ LCD Screen assembly

2-6. REMOVAL OF LCD SCREEN ASSEMBLY (4" LCD)

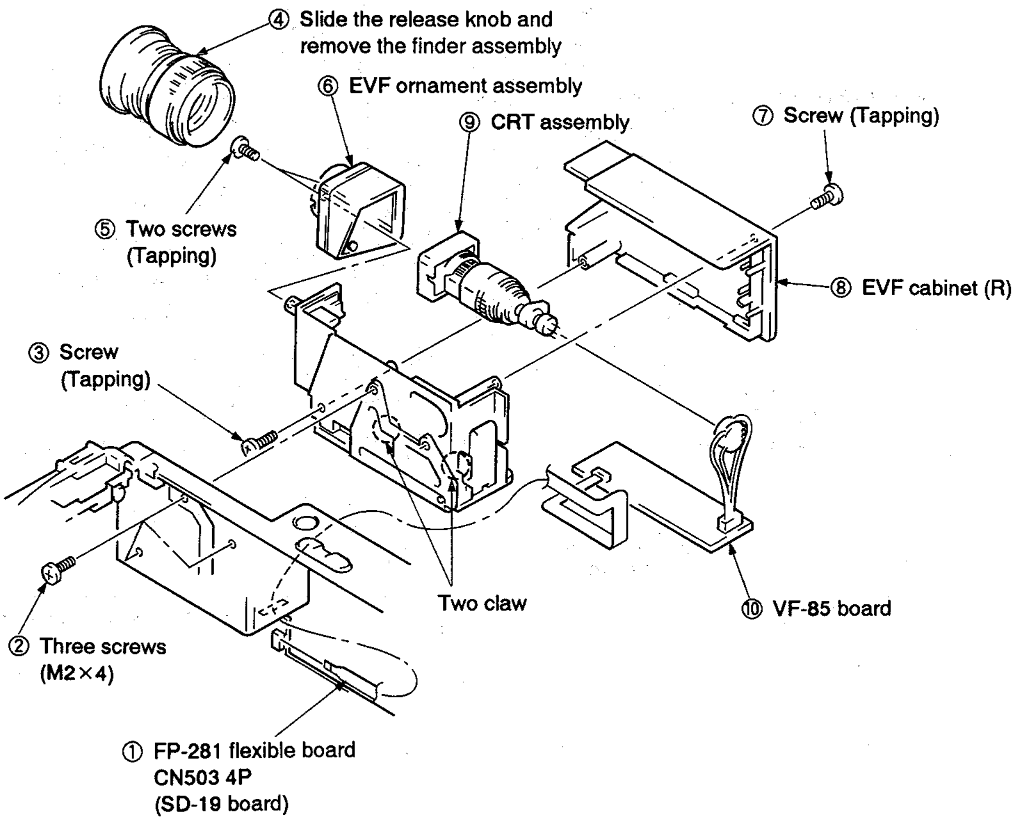

⑦ Two screws (M2×4)
② Three screws (Tapping)
③ Two screws (Tapping)
⑥ Connector CN502 13P (SD-19 board)
⑤ Connector CN511 9P (SD-19 board)
⑧ Two screws (M2×4)
④ SD-19 board
⑨ Base hinge
⑩ Blind hinge
① Connector CN508 6P (SD-19 board)
⑫ Cover hinge
⑪ Screw (M2×4)
⑬ Three screws (M2×10.5)
⑭ LCD Screen assembly

2-7. REMOVAL OF EVF ASSEMBLY (Viewfinder for 3")



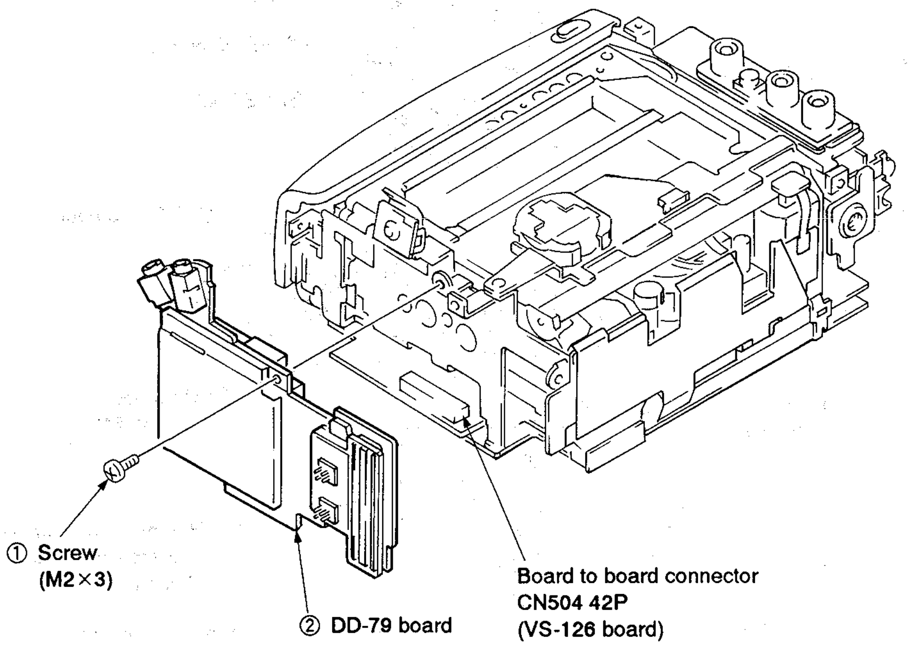
⑧ Slide the release knob and remove the finder assembly
⑨ Two screws (Tapping)
⑩ EVF ornament assembly
⑫ CRT assembly
⑪ EVF cabinet (R)
⑦ Screw (Tapping)
Claw
⑥ Guide rail
③ Two screws (M2×3)
⑭ EVF cabinet (L) assembly
⑬ VF-82 board
⑤ Tilt sleeve
④ Screw (Tapping)
② EVF Blind
① FP-280 flexible board CN503 4P (SD-18 board)

2-8. REMOVAL OF EVF ASSEMBLY (Viewfinder for 4")

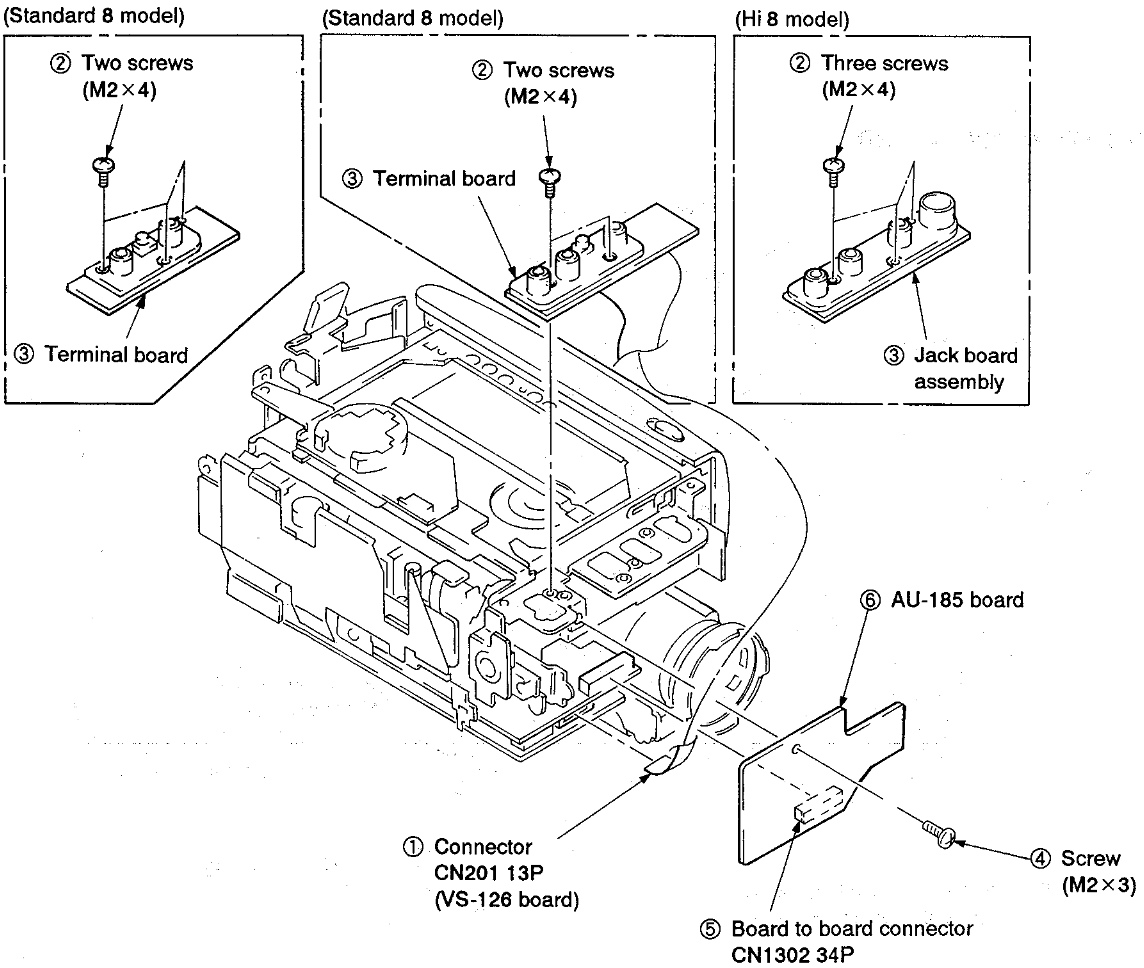


④ Slide the release knob and remove the finder assembly
⑥ EVF ornament assembly
⑨ CRT assembly
⑦ Screw (Tapping)
⑤ Two screws (Tapping)
⑧ EVF cabinet (R)
③ Screw (Tapping)
Two claw
⑩ VF-85 board
② Three screws (M2×4)
① FP-281 flexible board CN503 4P (SD-19 board)

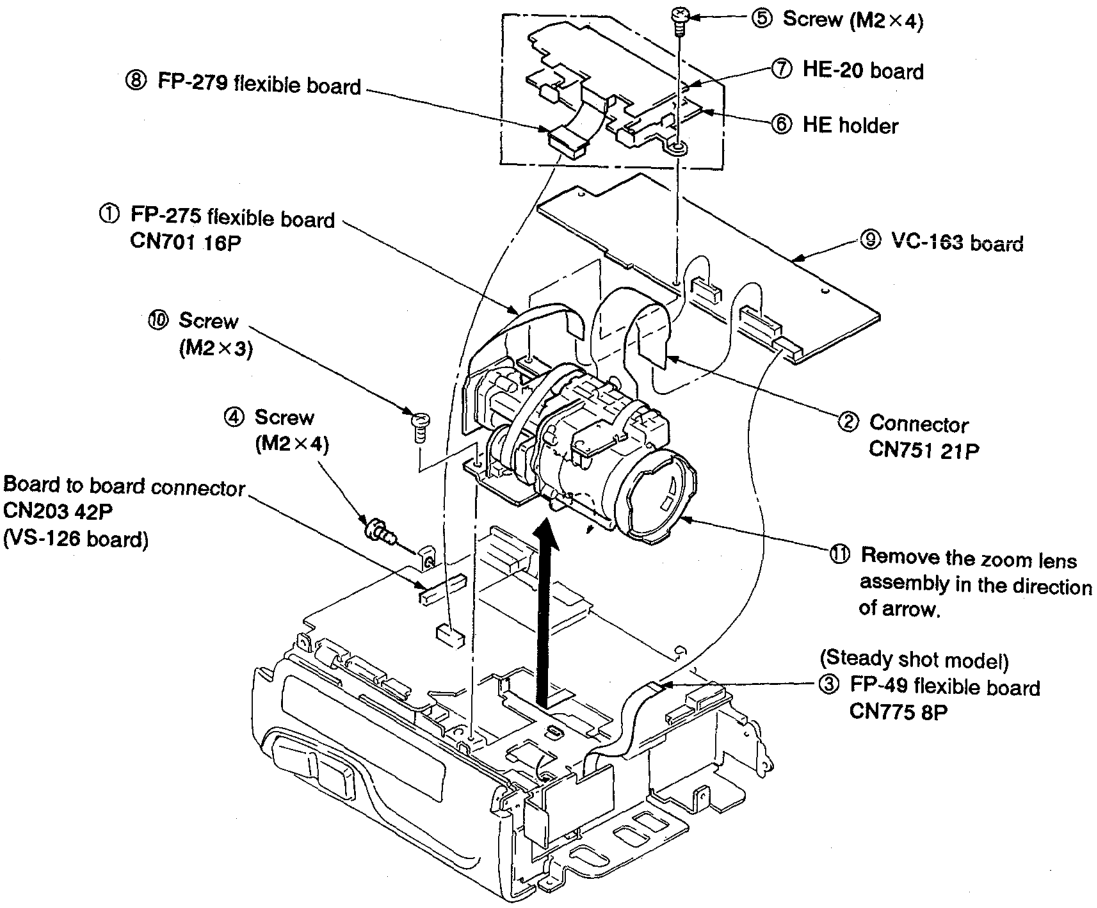
2-9. REMOVAL OF DD-79 BOARD


① Screw
(M2×3)
② DD-79 board
Board to board connector
CN504 42P
(VS-126 board)

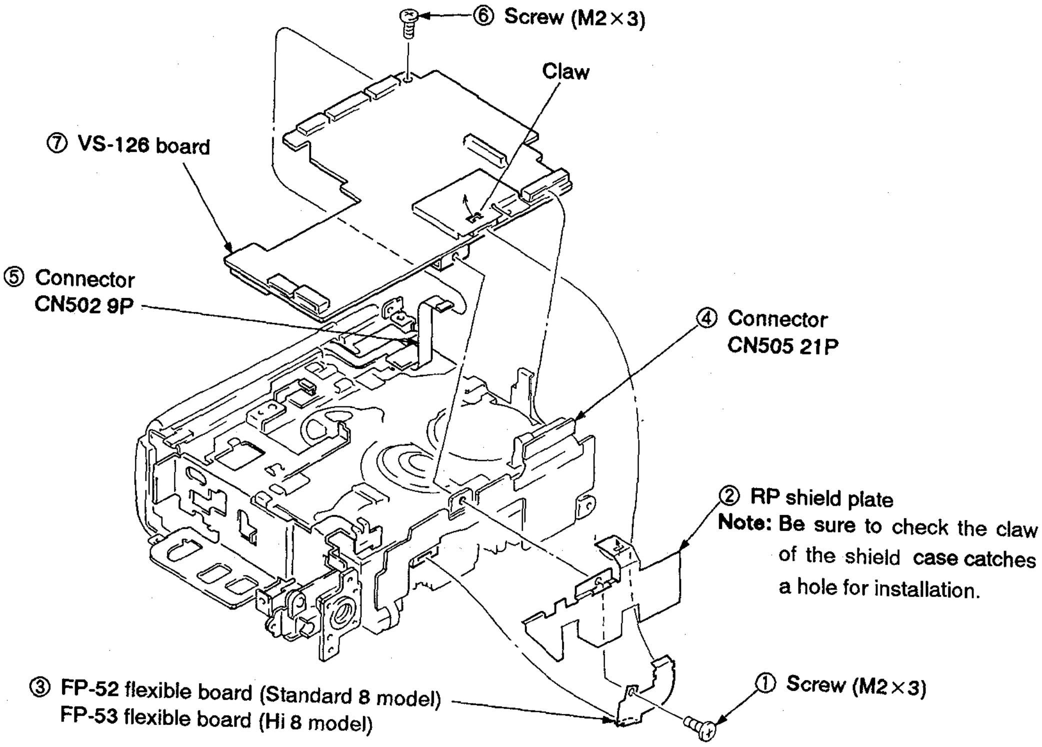
2-10. REMOVAL OF TERMINAL BOARD AND AU-185 BOARD


(Standard 8 model)
② Two screws
(M2×4)
③ Terminal board
(Standard 8 model)
② Two screws
(M2×4)
③ Terminal board
(Hi 8 model)
② Three screws
(M2×4)
③ Jack board
assembly
⑥ AU-185 board
① Connector
CN201 13P
(VS-126 board)
④ Screw
(M2×3)
⑤ Board to board connector
CN1302 34P

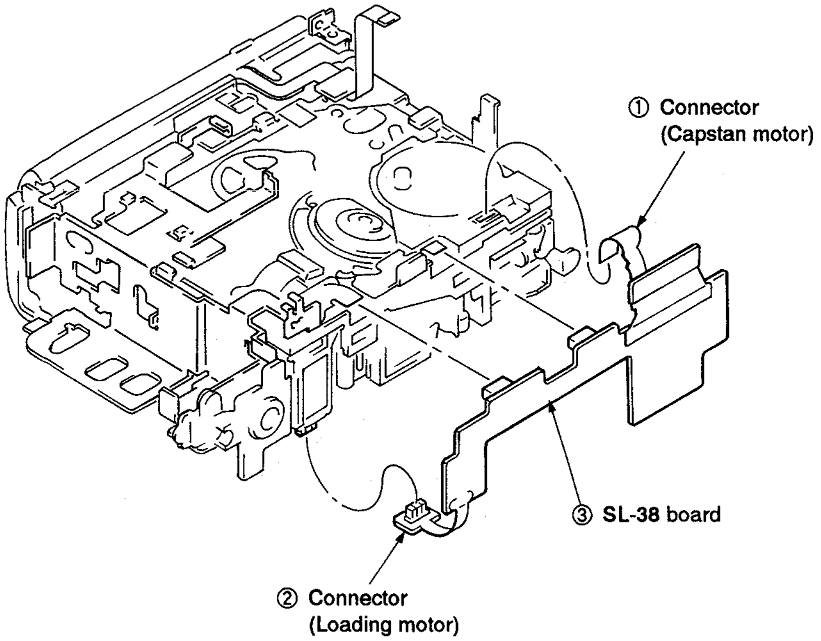
2-11. REMOVAL OF ZOOM LENS AND VC-163 BOARD


⑤ Screw (M2×4)
⑧ FP-279 flexible board
⑦ HE-20 board
⑥ HE holder
① FP-275 flexible board
CN701 16P
⑨ VC-163 board
⑩ Screw
(M2×3)
④ Screw
(M2×4)
② Connector
CN751 21P
Board to board connector
CN203 42P
(VS-126 board)
⑪ Remove the zoom lens
assembly in the direction
of arrow.
(Steady shot model)
③ FP-49 flexible board
CN775 8P

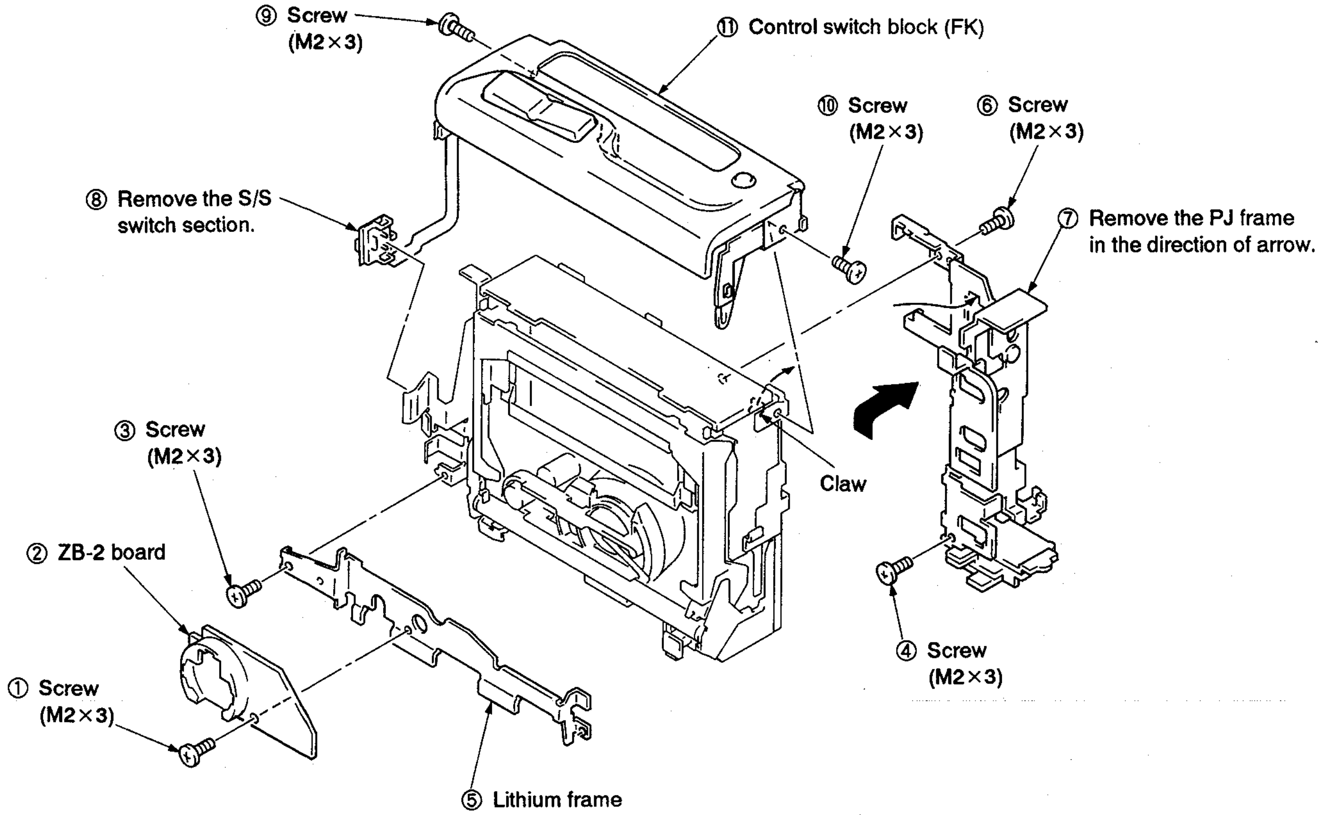
2-12. REMOVAL OF VS-126 BOARD


⑥ Screw (M2×3)
Claw
⑦ VS-126 board
⑤ Connector
CN502 9P
④ Connector
CN505 21P
② RP shield plate
Note: Be sure to check the claw of the shield case catches a hole for installation.
③ FP-52 flexible board (Standard 8 model)
FP-53 flexible board (Hi 8 model)
① Screw (M2×3)

2-13. REMOVAL OF SL-38 BOARD

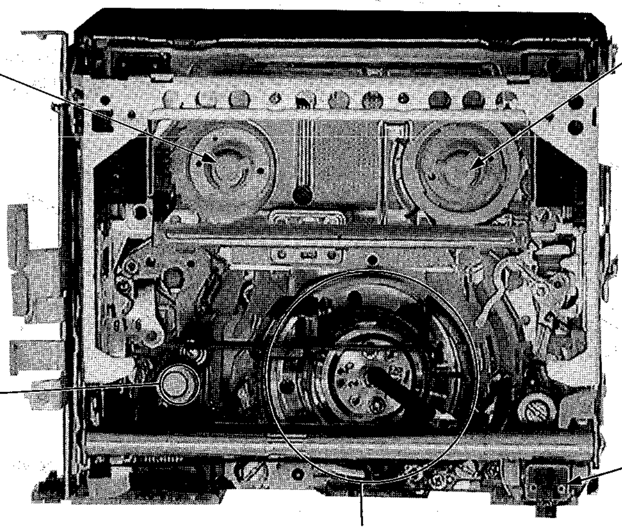

① Connector
(Capstan motor)
③ SL-38 board
② Connector
(Loading motor)

2-14. REMOVAL OF CONTROL SWITCH BLOCK (FK) AND ZB-2 BOARD


⑨ Screw
(M2×3)
⑪ Control switch block (FK)
⑩ Screw
(M2×3)
⑥ Screw
(M2×3)
⑧ Remove the S/S
switch section.
⑦ Remove the PJ frame
in the direction of arrow.
③ Screw
(M2×3)
Claw
② ZB-2 board
④ Screw
(M2×3)
① Screw
(M2×3)
⑤ Lithium frame

2-13. INTERNAL VIEWS

— Left side —


T reel table assembly
X-3941-274-1
S reel table assembly
X-3944-116-1
M902
Capstan motor
M903
Loading motor assembly
A-7040-304-A

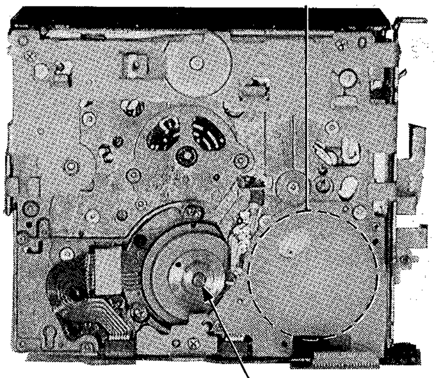
M901 (Standard 8 model)

Drum assembly	DGH-90A-R	A-7048-585-A
Upper drum assembly	DGR-90-R	A-7049-521-A

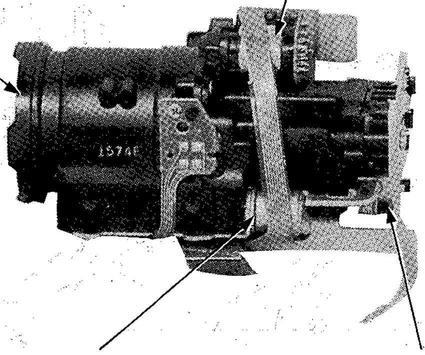
M901 (Hi 8 model)

Drum assembly	DGH-0C3A-R	A-7048-808-A
Upper drum assembly	DGR-94-R	A-7049-607-A

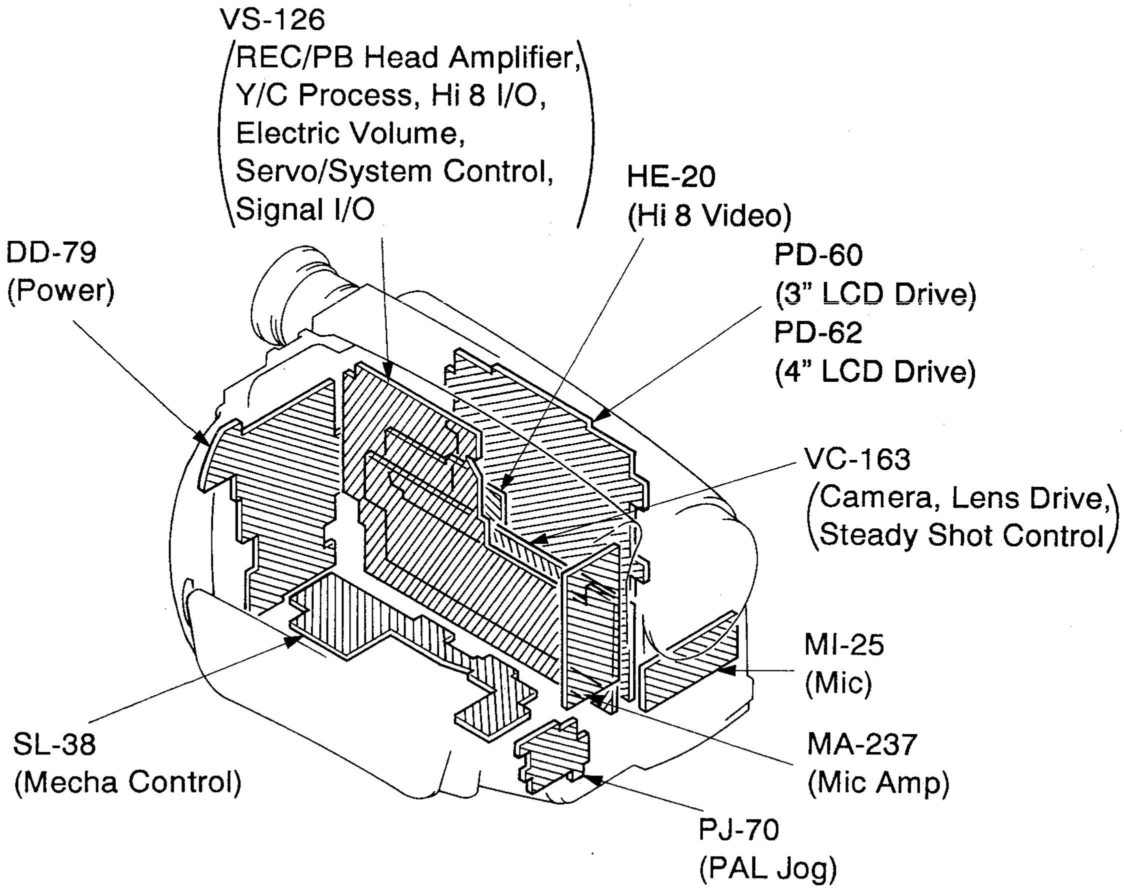
— Right side —

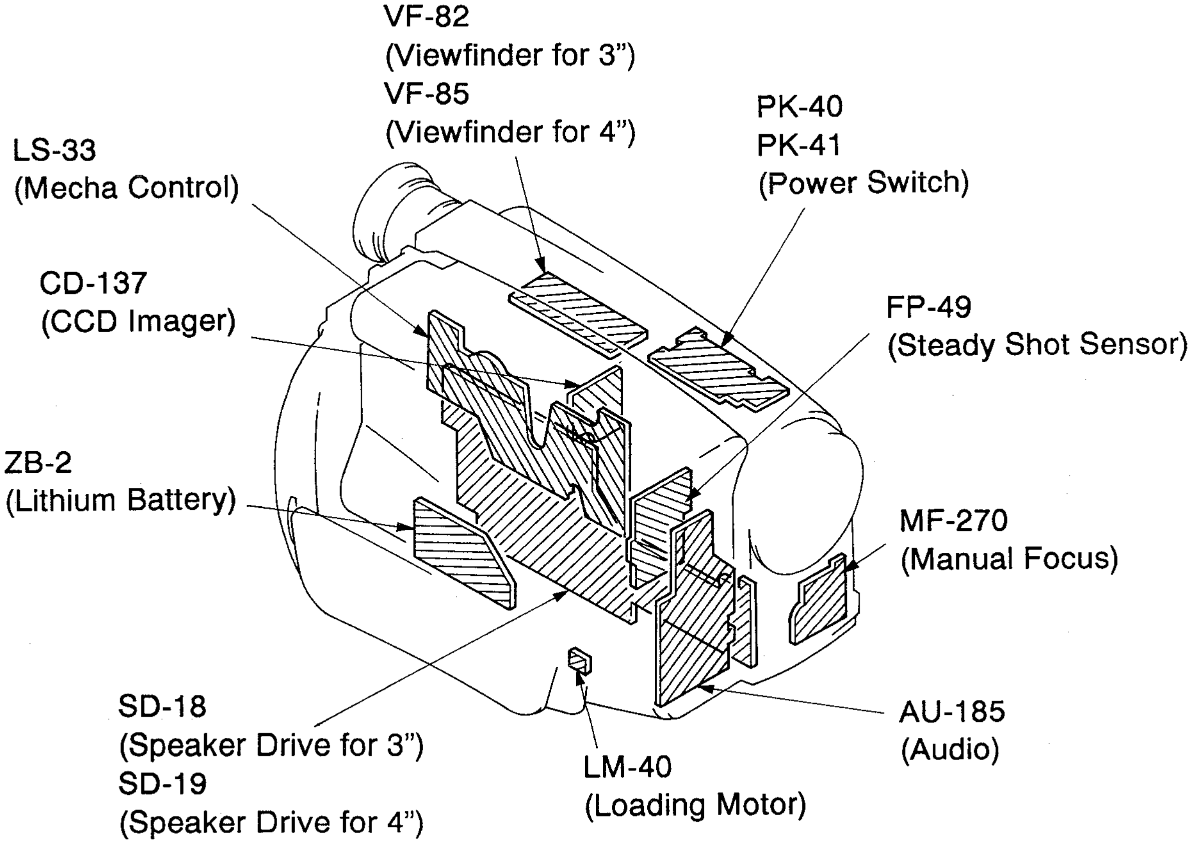

M902
Capstan motor (SCE-0101A)
8-835-477-12
M901
Drum assembly

— Zoom lens —


Device lens (LSV-140A) (TYPE Ⅰ)
8-848-704-01
Zoom lens (VCL-5412WA) (TYPE Ⅱ)
1-547-716-11
M907 (TYPE Ⅱ only)
IG meter (IRIS)
3-708-888-01
M906 (TYPE Ⅰ)
Zoom motor assembly
1-698-363-01
M909 (TYPE Ⅱ)
Zoom motor assembly
3-708-887-01
M905 (TYPE Ⅰ)
Focus motor assembly
1-698-364-01
M908 (TYPE Ⅱ)
Focus motor assembly
3-708-889-01

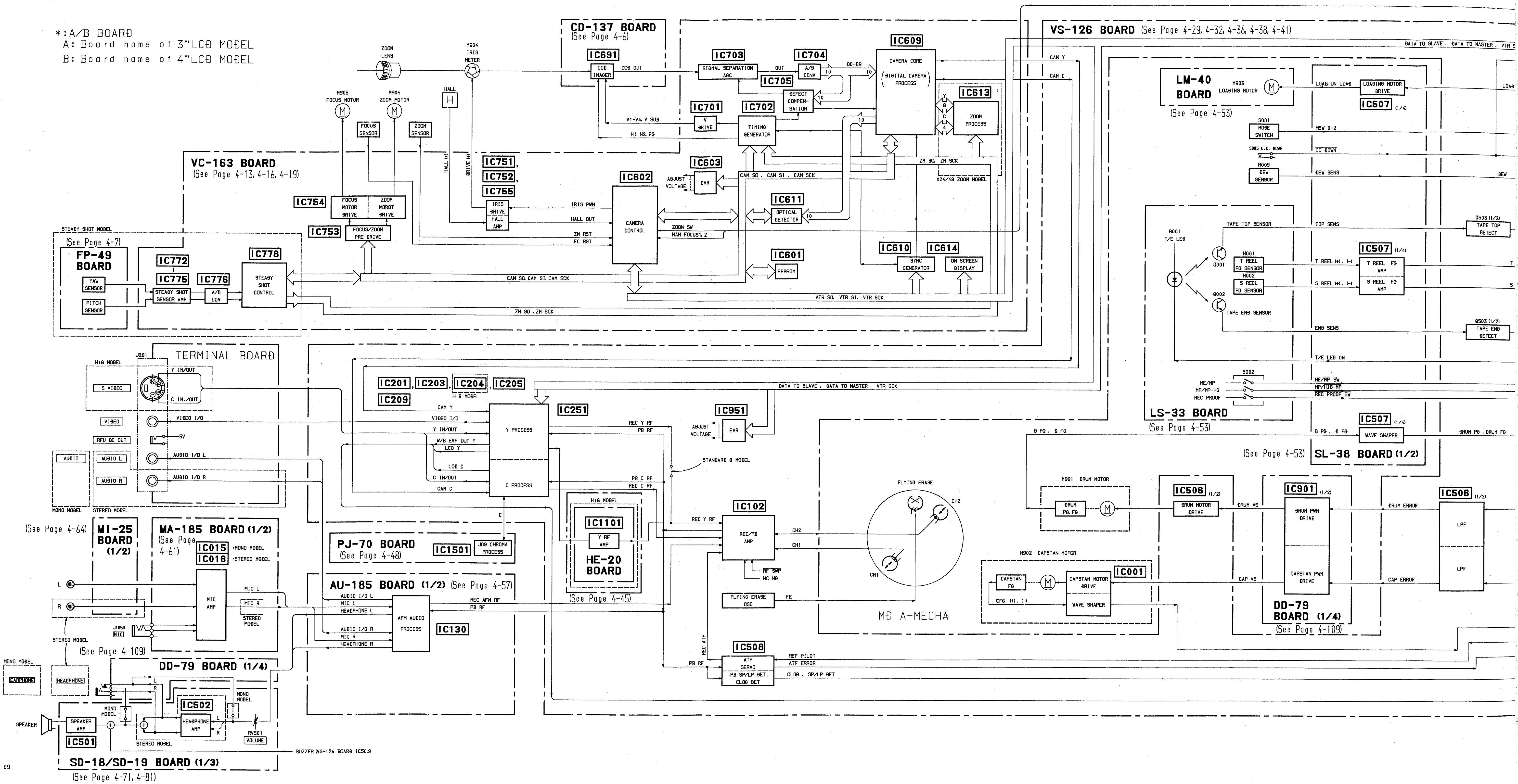
2-16. CIRCUIT BOARDS LOCATION


VS-126
(REC/PB Head Amplifier, Y/C Process, Hi 8 I/O, Electric Volume, Servo/System Control, Signal I/O)
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive, Steady Shot Control)
MI-25
(Mic)
SL-38
(Mecha Control)
MA-237
(Mic Amp)
PJ-70
(PAL Jog)


VF-82
(Viewfinder for 3")
VF-85
(Viewfinder for 4")
PK-40
PK-41
(Power Switch)
LS-33
(Mecha Control)
CD-137
(CCD Imager)
FP-49
(Steady Shot Sensor)
ZB-2
(Lithium Battery)
MF-270
(Manual Focus)
SD-18
(Speaker Drive for 3")
SD-19
(Speaker Drive for 4")
AU-185
(Audio)
LM-40
(Loading Motor)

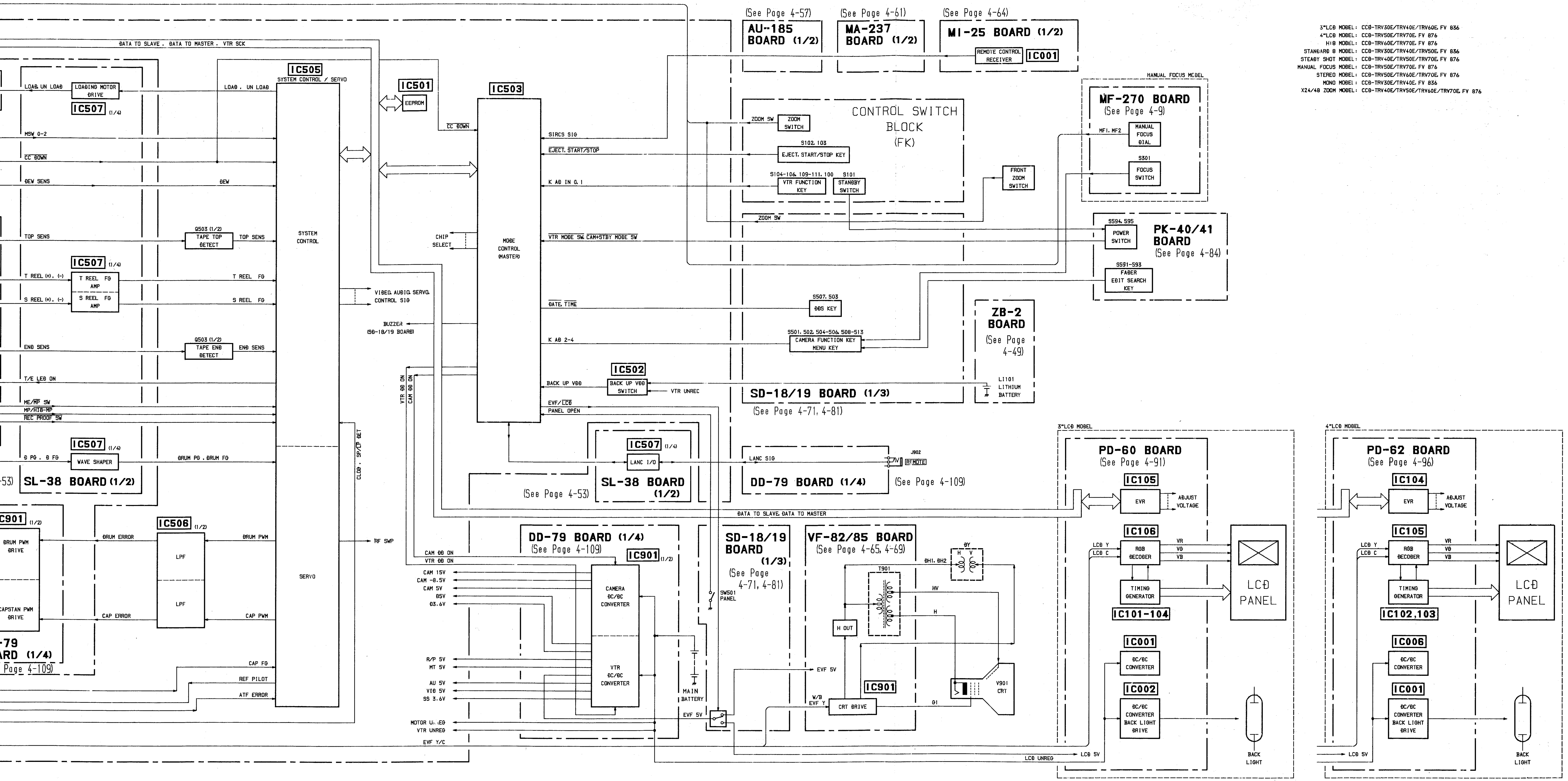
SECTION 3
BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM



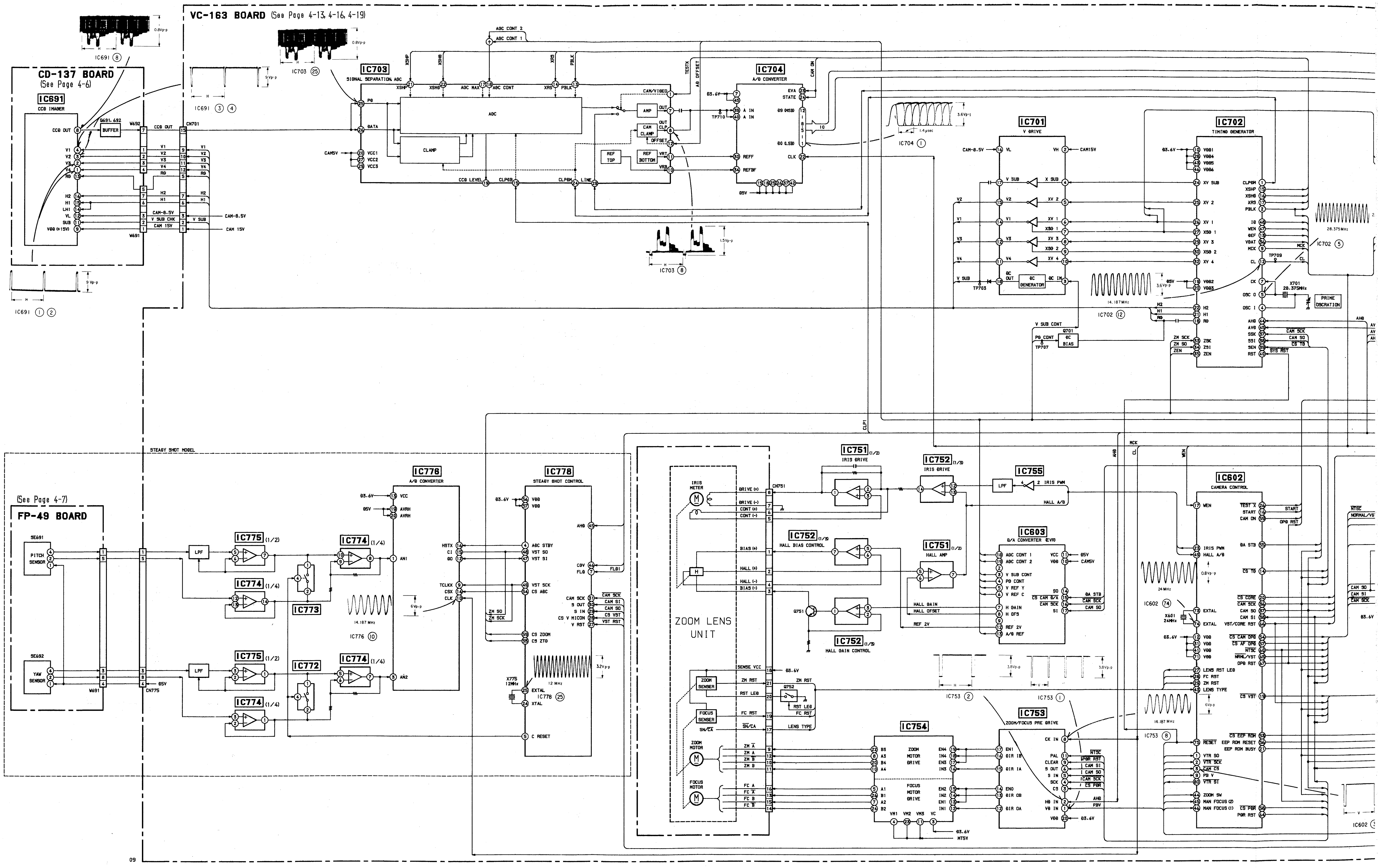
*:A/B BOARD
A: Board name of 3"LCD MODEL
B: Board name of 4"LCD MODEL

CD-137 BOARD (See Page 4-6)
IC691
CCD IMAGER
CCD OUT
ZOOM LENS
M904 IRIS METER
M905 FOCUS MOTOR
M906 ZOOM MOTOR
HALL
FOCUS SENSOR
ZOOM SENSOR
VC-163 BOARD (See Page 4-13, 4-16, 4-19)
IC754
FOCUS MOTOR DRIVE
ZOOM MOTOR DRIVE
IC753
FOCUS/ZOOM PRE DRIVE
IC751, IC752, IC755
IRIS DRIVE
HALL AMP
HALL (+)
DRIVE (+)
IRIS PWM
HALL OUT
ZM RST
FC RST
IC602
CAMERA CONTROL
ADJUST VOLTAGE
IC603
EVR
CAM SO, CAM SI, CAM SCK
ZOOM SW
MAN FOCUS1, 2
IC611
OPTICAL DETECTOR
IC601
EEPROM
IC703
SIGNAL SEPARATION AGC
OUT
IC704
A/D CONV
D0-D9
IC705
DEFECT COMPEN-SATION
IC701
V DRIVE
IC702
TIMING GENERATOR
V1-V4, V SUB
H1, H2, RG
IC609
CAMERA CORE
(DIGITAL CAMERA PROCESS)
IC613
ZOOM PROCESS
Y
C
8
4
10
ZM SO, ZM SCK
X24/48 ZOOM MODEL
IC610
SYNC GENERATOR
IC614
ON SCREEN DISPLAY
VTR SO, VTR SI, VTR SCK
ZM SO, ZM SCK
CAM SO, CAM SI, CAM SCK
STEADY SHOT MODEL
(See Page 4-7)
FP-49 BOARD
YAW SENSOR
PITCH SENSOR
IC772
IC775
IC776
STEADY SHOT SENSOR AMP
A/D CONV
IC778
STEADY SHOT CONTROL
TERMINAL BOARD
J201
HI8 MODEL
S VIDEO
Y IN/OUT
C IN/OUT
VIDEO
VIDEO I/O
RFU DC OUT
5V
AUDIO
AUDIO L
AUDIO R
AUDIO I/O L
AUDIO I/O R
MONO MODEL
STEREO MODEL
IC201, IC203, IC204, IC205
IC209
HI8 MODEL
CAM Y
VIDEO I/O
Y IN/OUT
W/B EVF OUT Y
LCD Y
LCD C
C IN/OUT
CAM C
Y PROCESS
C PROCESS
IC251
DATA TO SLAVE, DATA TO MASTER, VTR SCK
REC Y RF
PB RF
PB C RF
REC C RF
IC951
EVR
ADJUST VOLTAGE
STANDARD 8 MODEL
HI8 MODEL
IC1101
Y RF AMP
HE-20 BOARD
(See Page 4-45)
PJ-70 BOARD (See Page 4-48)
IC1501
JOG CHROMA PROCESS
AU-185 BOARD (1/2) (See Page 4-57)
AUDIO I/O L
MIC L
HEADPHONE L
AUDIO I/O R
MIC R
HEADPHONE R
AFM AUDIO PROCESS
IC130
REC AFM RF
PB RF
IC102
REC/PB AMP
REC Y RF
CH2
CH1
RF SWP
HC HD
FLYING ERASE OSC
FE
IC508
ATF SERVO
PB SP/LP DET
CLOG DET
REC ATF
PB RF
REF PILOT
ATF ERROR
CLOG, SP/LP DET
FLYING ERASE
CH2
CH1
MD A-MECHA
(See Page 4-64)
MI-25 BOARD (1/2)
MA-185 BOARD (1/2)
(See Page 4-61)
IC015 :MONO MODEL
IC016 :STEREO MODEL
MIC AMP
MIC L
MIC R
STEREO MODEL
L
R
J1050 MIC
STEREO MODEL
(See Page 4-109)
DD-79 BOARD (1/4)
MONO MODEL
EARPHONE
HEADPHONE
MONO MODEL
SPEAKER
SPEAKER AMP
IC501
IC502
HEADPHONE AMP
STEREO MODEL
RV501 VOLUME
BUZZER (VS-126 BOARD IC505)
SD-18/SD-19 BOARD (1/3)
(See Page 4-71, 4-81)
09
VS-126 BOARD (See Page 4-29, 4-32, 4-36, 4-38, 4-41)
CAM Y
CAM C
DATA TO SLAVE, DATA TO MASTER, VTR S
LM-40 BOARD
(See Page 4-53)
M903 LOADING MOTOR
LOAD, UN LOAD
LOADING MOTOR DRIVE
IC507 (1/4)
LOAD
S001 MODE SWITCH
MSW 0-2
S005 C.C. DOWN
CC DOWN
R009 DEW SENSOR
DEW SENS
DEW
TAPE TOP SENSOR
TOP SENS
Q503 (1/2) TAPE TOP DETECT
D001 T/E LED
Q001
Q002
H001 T REEL FG SENSOR
H002 S REEL FG SENSOR
T REEL (+), (-)
S REEL (+), (-)
IC507 (1/4)
T REEL FG AMP
S REEL FG AMP
TAPE END SENSOR
END SENS
Q503 (1/2) TAPE END DETECT
T/E LED ON
S002
ME/MP
MP/MP-HG
REC PROOF
ME/MP SW
MP/HI8-MP
REC PROOF SW
LS-33 BOARD
(See Page 4-53)
D PG, D FG
IC507 (1/4)
WAVE SHAPER
DRUM PG, DRUM FG
(See Page 4-53) SL-38 BOARD (1/2)
M901 DRUM MOTOR
DRUM PG, FG
IC506 (1/2)
DRUM MOTOR DRIVE
DRUM VS
IC901 (1/2)
DRUM PWM DRIVE
CAPSTAN PWM DRIVE
DRUM ERROR
IC506 (1/2)
LPF
LPF
M902 CAPSTAN MOTOR
CAPSTAN FG
IC001
CAPSTAN MOTOR DRIVE
WAVE SHAPER
CFG (+), (-)
CAP VS
CAP ERROR
DD-79 BOARD (1/4)
(See Page 4-109)

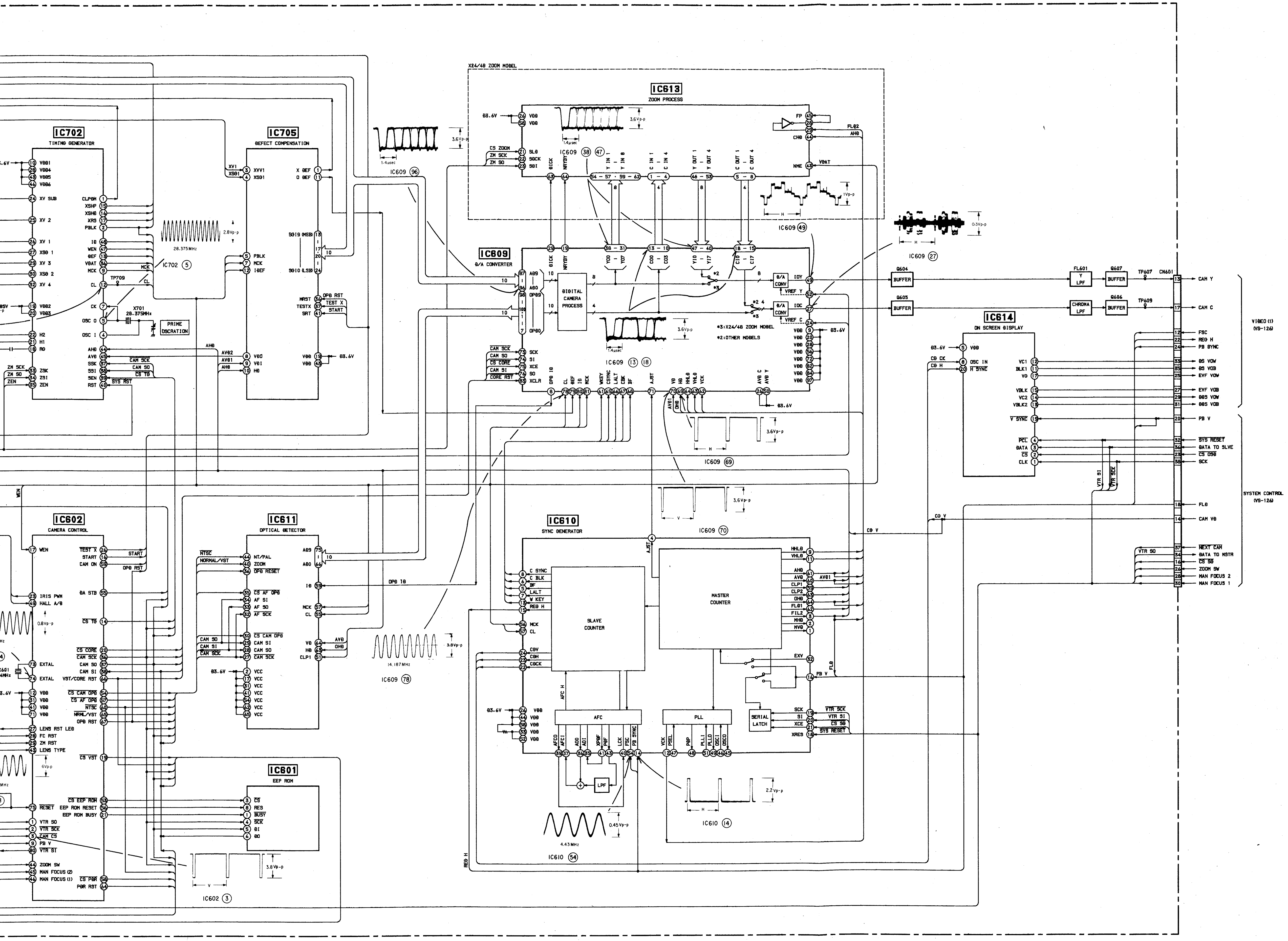

DATA TO SLAVE . DATA TO MASTER . VTR SCK
LOAD. UN LOAD
LOADING MOTOR DRIVE
IC507 (1/4)
MSW 0-2
CC DOWN
DEW SENS
DEW
TOP SENS
Q503 (1/2)
TAPE TOP DETECT
TOP SENS
IC507 (1/4)
T REEL (+). (-)
S REEL (+). (-)
T REEL FG AMP
S REEL FG AMP
T REEL FG
S REEL FG
END SENS
Q503 (1/2)
TAPE END DETECT
END SENS
T/E LED ON
ME/MP SW
MP/HI8-MP
REC PROOF SW
IC507 (1/4)
D PG . D FG
WAVE SHAPER
DRUM PG . DRUM FG
-53)
SL-38 BOARD (1/2)
C901 (1/2)
DRUM PWM DRIVE
CAPSTAN PWM DRIVE
-79
ARD (1/4)
Page 4-109)
DRUM ERROR
CAP ERROR
IC506 (1/2)
LPF
LPF
DRUM PWM
CAP PWM
CAP FG
REF PILOT
ATF ERROR
IC505
SYSTEM CONTROL / SERVO
LOAD . UN LOAD
SYSTEM CONTROL
SERVO
CLDD . SP/LP DET
RF SWP
IC501
EEPROM
VIDEO. AUDIO. SERVO. CONTROL SIG
BUZZER (SD-18/19 BOARD)
CHIP SELECT
IC503
CC DOWN
MODE CONTROL (MASTER)
SIRCS SIG
EJECT. START/STOP
K AD IN 0. 1
VTR MODE SW. CAM+STBY MODE SW
DATE. TIME
K AD 2-4
VTR DD ON
CAM DD ON
IC502
BACK UP VDD
BACK UP VDD SWITCH
VTR UNREC
EVF/LCD
PANEL OPEN
IC507 (1/4)
LANC I/O
SL-38 BOARD (1/2)
(See Page 4-53)
(See Page 4-57)
AU-185 BOARD (1/2)
(See Page 4-61)
MA-237 BOARD (1/2)
(See Page 4-64)
MI-25 BOARD (1/2)
REMOTE CONTROL RECEIVER
IC001
CONTROL SWITCH BLOCK (FK)
ZOOM SW
ZOOM SWITCH
S102. 103
EJECT. START/STOP KEY
S104-106. 109-111. 100
VTR FUNCTION KEY
S101
STANDBY SWITCH
FRONT ZOOM SWITCH
ZOOM SW
S507. 503
DDS KEY
S501. 502. 504-506. 508-513
CAMERA FUNCTION KEY MENU KEY
SD-18/19 BOARD (1/3)
(See Page 4-71. 4-81)
ZB-2 BOARD
(See Page 4-49)
LI101 LITHIUM BATTERY
MANUAL FOCUS MODEL
MF-270 BOARD
(See Page 4-9)
MF1. MF2
MANUAL FOCUS DIAL
S301
FOCUS SWITCH
S594. 595
POWER SWITCH
PK-40/41 BOARD
(See Page 4-84)
S591-593
FADER EDIT SEARCH KEY
LANC SIG
J902
REMOTE
DD-79 BOARD (1/4)
(See Page 4-109)
DATA TO SLAVE. DATA TO MASTER
CAM DD ON
VTR DD ON
CAM 15V
CAM -8.5V
CAM 5V
D5V
D3.6V
R/P 5V
MT 5V
AU 5V
VID 5V
SS 3.6V
MOTOR UNREG
VTR UNREG
EVF Y/C
DD-79 BOARD (1/4)
(See Page 4-109)
IC901 (1/2)
CAMERA DC/DC CONVERTER
VTR DC/DC CONVERTER
MAIN BATTERY
EVF 5V
SD-18/19 BOARD (1/3)
(See Page 4-71, 4-81)
SW501 PANEL
VF-82/85 BOARD
(See Page 4-65, 4-69)
DY
H V
DH1. DH2
T901
HV
H
H OUT
EVF 5V
IC901
W/B EVF Y
CRT DRIVE
G1
V901 CRT
LCD UNREG
LCD 5V
3"LCD MODEL
PD-60 BOARD
(See Page 4-91)
IC105
EVR
ADJUST VOLTAGE
IC106
LCD Y
LCD C
RGB DECODER
VR
VG
VB
TIMING GENERATOR
IC101-104
LCD PANEL
IC001
DC/DC CONVERTER
IC002
DC/DC CONVERTER BACK LIGHT DRIVE
BACK LIGHT
4"LCD MODEL
PD-62 BOARD
(See Page 4-96)
IC104
EVR
ADJUST VOLTAGE
IC105
LCD Y
LCD C
RGB DECODER
VR
VG
VB
TIMING GENERATOR
IC102,103
LCD PANEL
IC006
DC/DC CONVERTER
IC001
DC/DC CONVERTER BACK LIGHT DRIVE
LCD 5V
BACK LIGHT

3"LCD MODEL: CCD-TRV30E/TRV40E/TRV60E. FV 836
4"LCD MODEL: CCD-TRV50E/TRV70E. FV 876
HI8 MODEL: CCD-TRV60E/TRV70E. FV 876
STANDARD 8 MODEL: CCD-TRV30E/TRV40E/TRV50E. FV 836
STEADY SHOT MODEL: CCD-TRV40E/TRV50E/TRV70E. FV 876
MANUAL FOCUS MODEL: CCD-TRV50E/TRV70E. FV 876
STEREO MODEL: CCD-TRV50E/TRV60E/TRV70E. FV 876
MONO MODEL: CCD-TRV30E/TRV40E. FV 836
X24/48 ZOOM MODEL: CCD-TRV40E/TRV50E/TRV60E/TRV70E. FV 876

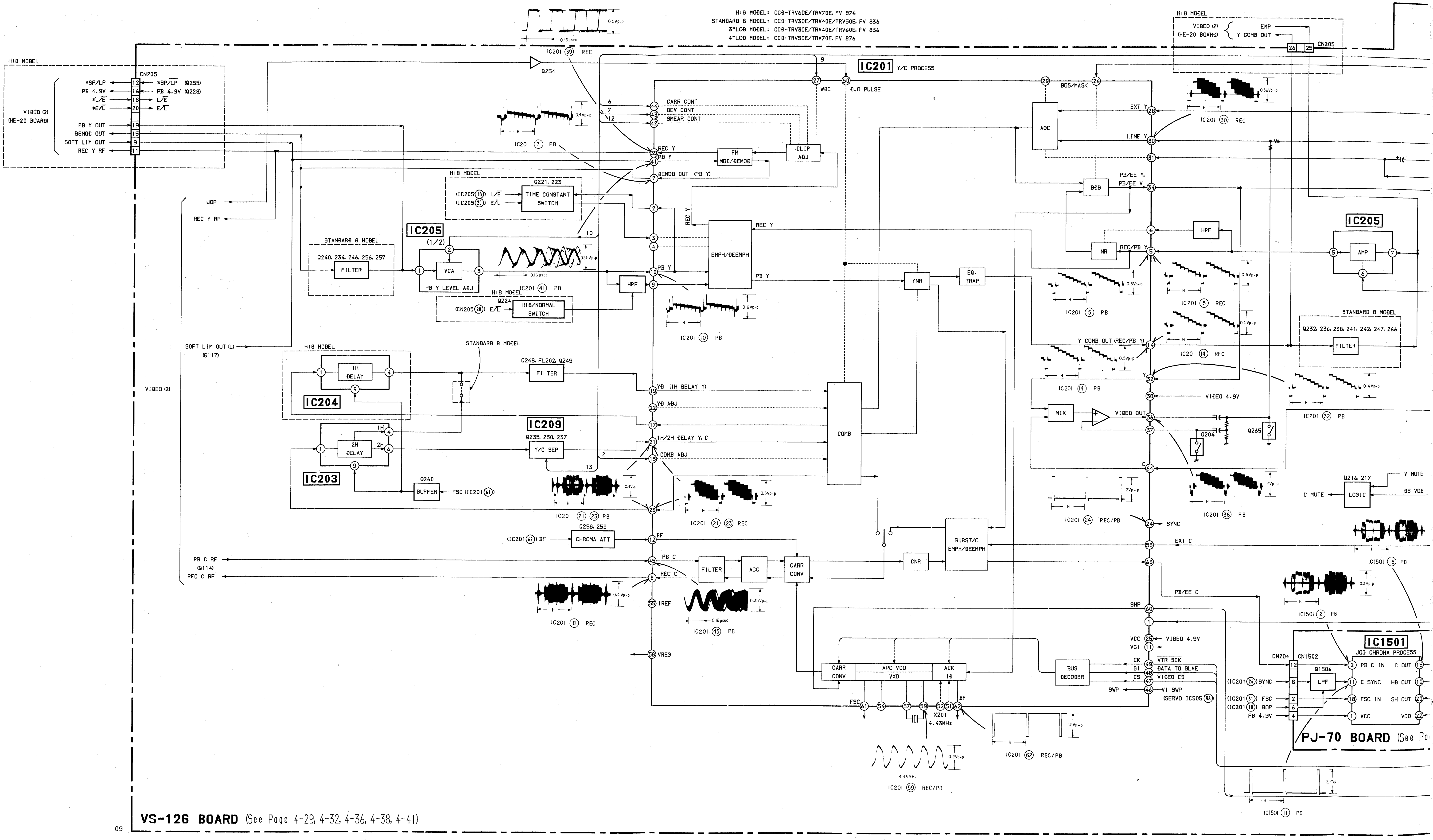
3-2. CAMERA BLOCK DIAGRAM


VC-163 BOARD (See Page 4-13, 4-16, 4-19)
CD-137 BOARD (See Page 4-6)
IC691 CCD IMAGER
Q691, 692 BUFFER
IC691 ⑧
IC691 ③ ④
IC691 ① ②
IC703 ㉕
IC703 SIGNAL SEPARATION, AGC
AGC
CLAMP
IC703 ⑧
IC704 A/D CONVERTER
IC704 ①
IC701 V DRIVE
IC702 TIMING GENERATOR
IC702 ⑤
IC702 ⑫
X701 28.375MHz
PRIME OSCRATION
Q701 DC BIAS
REF TOP
REF BOTTOM
AMP
CAM CLAMP
STEADY SHOT MODEL
(See Page 4-7)
FP-49 BOARD
SE691 PITCH SENSOR
SE692 YAW SENSOR
LPF
IC775 (1/2)
IC774 (1/4)
IC773
IC772
IC776 A/D CONVERTER
IC776 ⑩
IC778 STEADY SHOT CONTROL
X775 12MHz
IC778 ㉕
ZOOM LENS UNIT
IRIS METER
ZOOM SENSER
FOCUS SENSER
ZOOM MOTOR
FOCUS MOTOR
CN751
IC751 (1/2) IRIS DRIVE
IC752 (1/3) IRIS DRIVE
IC755
IC752 (1/3) HALL BIAS CONTROL
IC751 (1/2) HALL AMP
IC752 (1/3) HALL GAIN CONTROL
Q751
Q752
IC603 D/A CONVERTER (EVR)
IC754 ZOOM MOTOR DRIVE / FOCUS MOTOR DRIVE
IC753 ZOOM/FOCUS PRE DRIVE
IC753 ②
IC753 ①
IC753 ⑧
IC602 CAMERA CONTROL
IC602 ㉔
X601 24MHz
14.187MHz
28.375MHz
24MHz
12MHz
0.8Vp-p
9Vp-p
1.5Vp-p
3.6Vp-p
6Vp-p
3.2Vp-p
3.8Vp-p
W691
W692
CN701
CN775
09

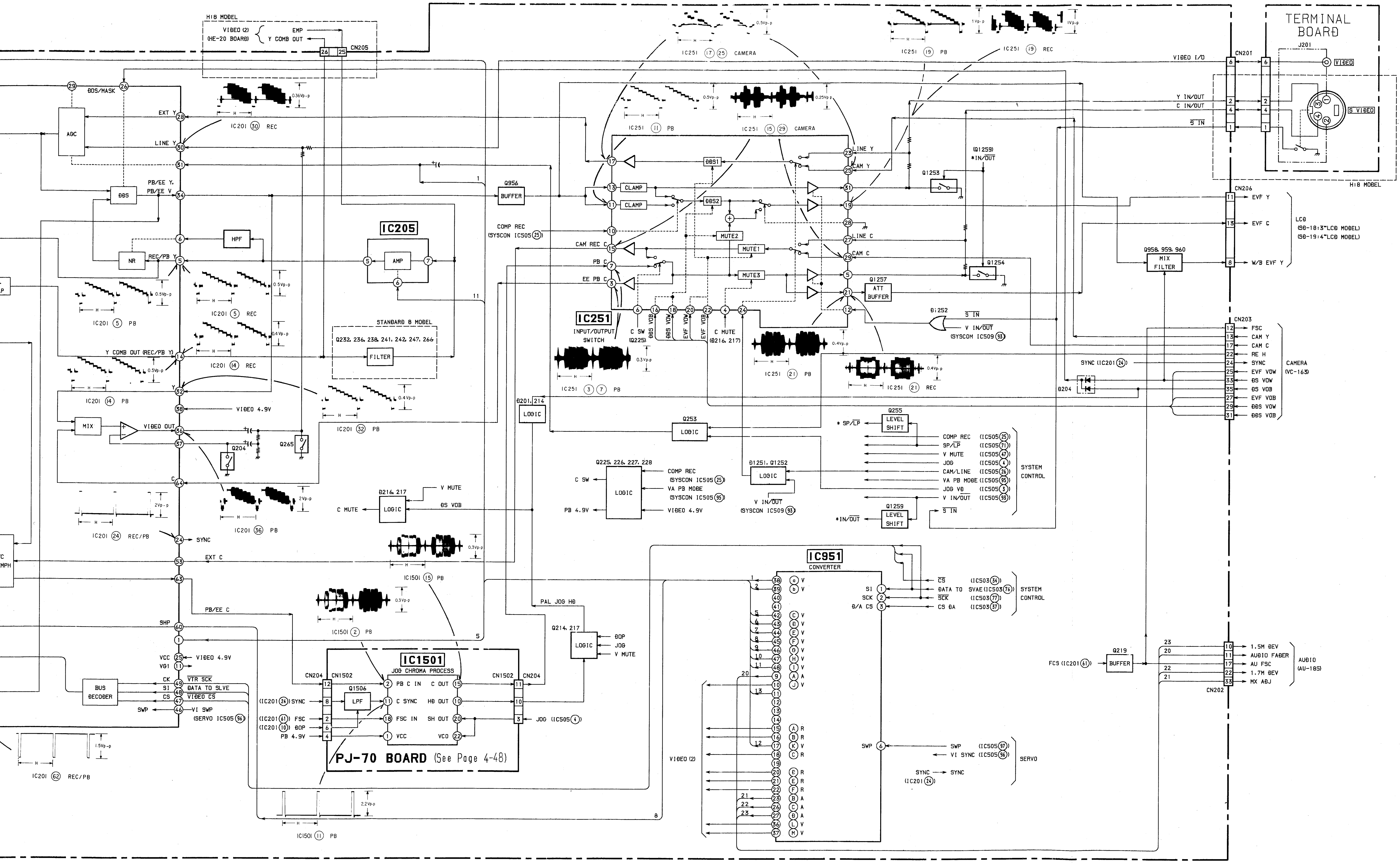
X24/48 ZOOM MODEL:CCD-TRV40E/TRV50E/TRV60E/TRV70E, FV 876
STEADY SHOT MODEL:CCD-TRV40E/TEV50E/TRV70E, FV 876


IC702
TIMING GENERATOR
VDD1
VDD4
VDD5
VDD6
XV SUB
XV 2
XV 1
XSG 1
XV 3
XSG 2
XV 4
VDD2
VDD3
H2
H1
RG
ZM SCK
ZM SO
ZEN
ZSK
ZSI
ZEN
CLPDM
XSHP
XSHD
XRS
PBLK
ID
WEN
DEF
VDAT
MCK
CL
TP709
CK
OSC O
OSC I
X701
28.375MHz
PRIME OSCRATION
AHD
AVD
SSK
SSI
SEN
RST
CAM SCK
CAM SO
CS TG
SYS RST
28.375MHz
2.8Vp-p
IC702 (5)
IC705
DEFECT COMPENSATION
XV1
XSG1
XVV1
XSG1
X DEF
O DEF
SDI9 (MSB)
SDI0 (LSB)
10
PBLK
MCK
IDEF
MRST
TESTX
SRT
OPD RST
TEST X
START
AHD
AVD2
AVD1
VDO
VDI
HD
VDD
B3.6V
3.6Vp-p
1.4μsec
IC609 (96)
X24/48 ZOOM MODEL
IC613
ZOOM PROCESS
B3.6V
VDD
CS ZOOM
ZM SCK
ZM SO
SLD
SDCK
SDI
DICK
NRYBY
IC609 (38) (47)
Y IN 1 – Y IN 8
C IN 1 – C IN 4
Y OUT 1 – Y OUT 4
C OUT 1 – C OUT 4
54 – 57 · 59 – 62
1 – 4
46 – 53
5 – 8
FP
CHD
NME
FLD2
AHD
VDAT
1Vp-p
H
IC609 (49)
IC609
D/A CONVERTER
AD9
AD0
OPD9
OPD0
DIGITAL CAMERA PROCESS
YD0 – YD7
CD0 – CD3
Y10 – Y17
C10 – C17
D/A CONV
IDY
VREF Y
IDC
VREF C
*3:X24/48 ZOOM MODEL
*2:OTHER MODELS
CAM SCK
CAM SO
CS CORE
CAM SI
CORE RST
SCK
SI
XCE
SO
XCLR
OPD ID
CL
DEF
ID
MCK
WKEY
CSYNC
LALT
CBK
BF
AJST
VD
HD
HHLD
VHLD
VCK
AVD C
AVD Y
AVD1
OHD
IC609 (13) (18)
IC609 (69)
IC609 (27)
0.3Vp-p
Q604
BUFFER
Q605
BUFFER
FL601
Y LPF
CHROMA LPF
Q607
BUFFER
Q606
BUFFER
TP607
TP609
CN601
CAM Y
CAM C
FSC
REG H
PB SYNC
DS VDW
DS VDB
EVF VDW
EVF VDB
DDS VDW
DDS VDB
PB V
SYS RESET
DATA TO SLVE
CS OSD
SCK
FLD
CAM VD
NEXT CAM
DATA TO MSTR
CS SG
ZOOM SW
MAN FOCUS 2
MAN FOCUS 1
VIDEO (1) (VS-126)
SYSTEM CONTROL (VS-126)
IC614
ON SCREEN DISPLAY
VDD
CG CK
CG H
OSC IN
H SYNC
VC1
BLK1
VG
VBLK
VC2
VBLK2
V SYNC
PCL
DATA
CS
CLK
VTR SI
VTR SCK
VTR SO
CG V
IC609 (70)
V
IC610
SYNC GENERATOR
C SYNC
C BLK
BF
LALT
W KEY
REG H
MCK
CL
CGV
CGH
CGCK
SLAVE COUNTER
MASTER COUNTER
HHLD
VHLD
AHD
AVD
CLP1
CLP2
OHD
FLD1
FIL2
MHD
MVD
EXV
PB V
FLD
SERIAL LATCH
SCK
SI
XCE
XRES
VTR SCK
VTR SI
CS SG
SYS RESET
AFC H
AFC
PLL
LPF
AFCO
AFCI
ADO
ADI
XPDF
PDF
LCK
FSC
PB SYNC
VCK
PSEL
PDP
PLLI
PLLO
OSCI
OSCO
4.43MHz
0.45Vp-p
IC610 (54)
2.2Vp-p
IC610 (14)
REG H
IC602
CAMERA CONTROL
WEN
TEST X
START
CAM ON
OPD RST
IRIS PWM
HALL A/D
DA STB
0.8Vp-p
CS TG
CS CORE
CAM SCK
CAM SO
CAM SI
EXTAL
VST/CORE RST
VDD
CS CAM OPD
CS AF OPD
NTSC
NRML/VST
OPD RST
LENS RST LED
FC RST
ZM RST
LENS TYPE
CS VST
6Vp-p
CS EEP ROM
RESET
EEP ROM RESET
EEP ROM BUSY
VTR SO
VTR SCK
CAM CS
PB V
VTR SI
ZOOM SW
MAN FOCUS (2)
MAN FOCUS (1)
CS PDR
PDR RST
3.8Vp-p
IC602 (3)
IC611
OPTICAL DETECTOR
NTSC
NORMAL/VST
NT/PAL
ZOOM
OPD RESET
CS AF OPD
AF SI
AF SO
AF SCK
CAM SO
CAM SI
CAM SCK
CS CAM OPD
VCC
AD9
AD0
ID
MCK
CL
VD
HD
CLP1
AVD
OHD
OPD ID
14.187MHz
3.8Vp-p
IC609 (78)
IC601
EEP ROM
CS
RES
BUSY
SCK
DI
DO

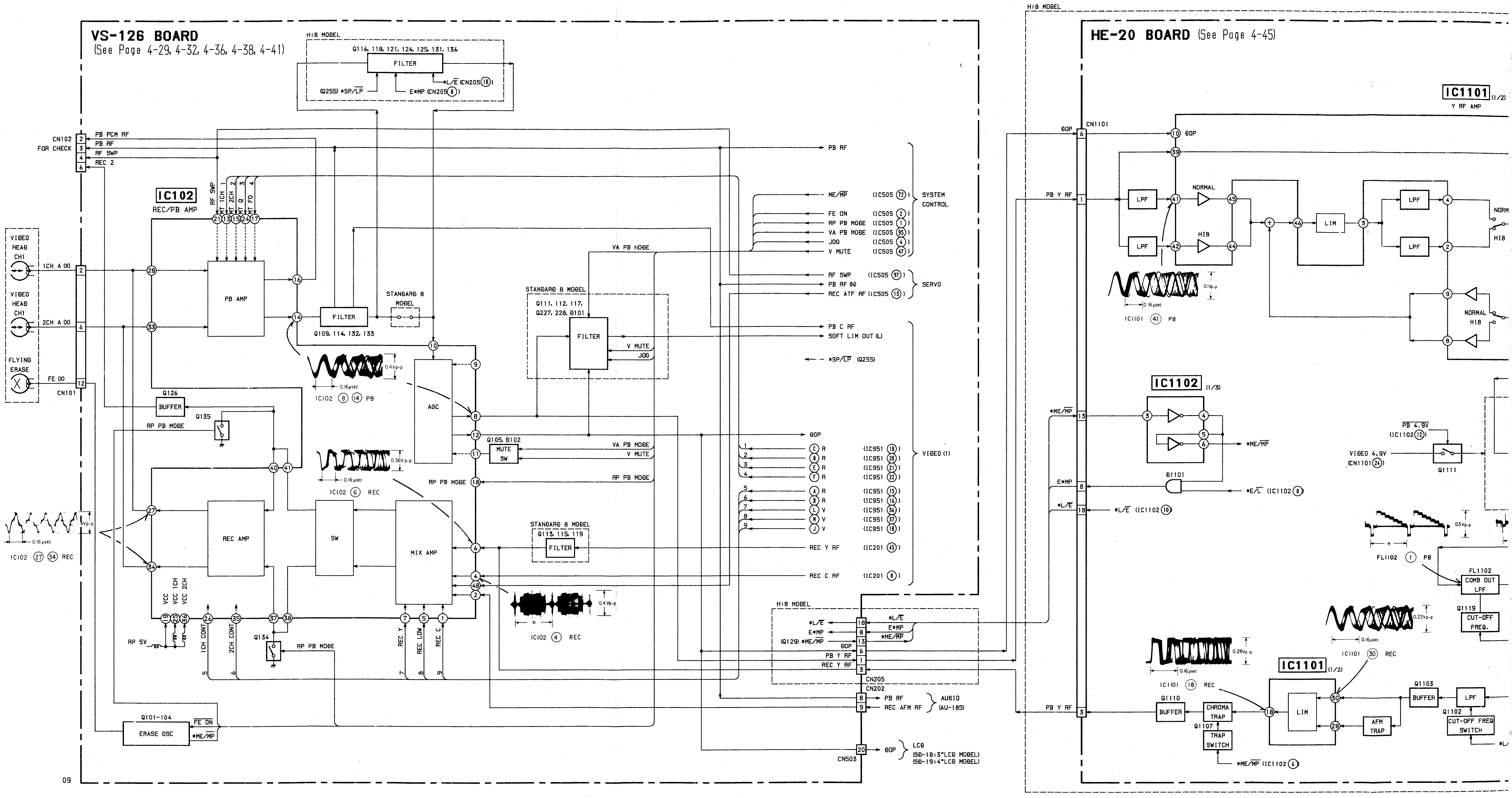
3-3. VIDEO (1) BLOCK DIAGRAM



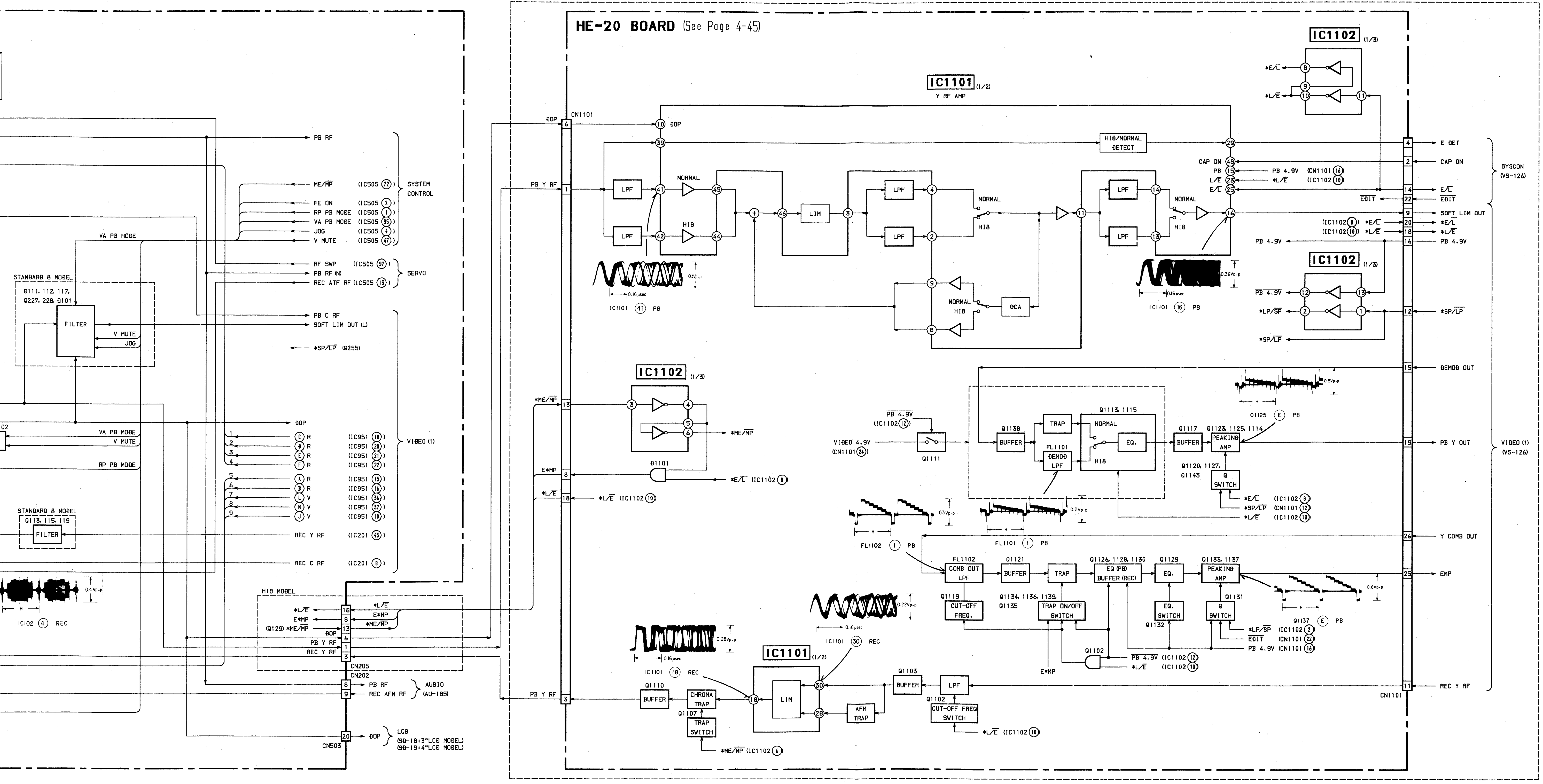
H18 MODEL: CCD-TRV60E/TRV70E, FV 876
STANDARD 8 MODEL: CCD-TRV30E/TRV40E/TRV50E, FV 836
3"LCD MODEL: CCD-TRV30E/TRV40E/TRV60E, FV 836
4"LCD MODEL: CCD-TRV50E/TRV70E, FV 876
H18 MODEL
VIDEO (2) (HE-20 BOARD)
CN205
*SP/LP
PB 4.9V
*L/E
*E/L
PB Y OUT
DEMOD OUT
SOFT LIM OUT
REC Y RF
*SP/LP (Q255)
PB 4.9V (Q228)
IC201 Y/C PROCESS
IC205
IC204
IC203
IC209
IC1501
JOG CHROMA PROCESS
Q254
WBC
D.O PULSE
CARR CONT
DEV CONT
SMEAR CONT
REC Y
PB Y
DEMOD OUT (PB Y)
FM MOD/DEMOD
CLIP ADJ
TIME CONSTANT SWITCH
Q221, 223
EMPH/DEEMPH
VCA
PB Y LEVEL ADJ
FILTER
STANDARD 8 MODEL
Q240, 234, 246, 256, 257
HPF
H18/NORMAL SWITCH
Q224
YNR
EQ. TRAP
1H DELAY
2H DELAY
Q248, FL202, Q249
YD (1H DELAY Y)
YD ADJ
1H/2H DELAY Y, C
COMB ADJ
COMB
Y/C SEP
Q235, 230, 237
BUFFER
Q260
FSC (IC201 61)
CHROMA ATT
Q258, 259
BF
PB C
REC C
ACC
CARR CONV
CNR
BURST/C EMPH/DEEMPH
IREF
VREG
APC VCO
VXO
ACK ID
X201 4.43MHz
BUS DECODER
CK
SI
CS
VTR SCK
DATA TO SLVE
VIDEO CS
SWP
VI SWP (SERVO IC505 96)
VCC
VG1
VIDEO 4.9V
SHP
PB/EE C
EXT C
SYNC
DOS/MASK
AGC
EXT Y
LINE Y
DOS
PB/EE Y, PB/EE V
NR
REC/PB Y
Y COMB OUT (REC/PB Y)
MIX
VIDEO OUT
Q204
Q265
AMP
HPF
STANDARD 8 MODEL
Q232, 236, 238, 241, 242, 247, 266
FILTER
D216, 217
LOGIC
V MUTE
C MUTE
DS VDD
EMP
Y COMB OUT
VIDEO (2) (HE-20 BOARD)
JOP
REC Y RF
SOFT LIM OUT (L) (Q117)
VIDEO (2)
PB C RF (Q114)
REC C RF
CN204
CN1502
Q1506
LPF
PB C IN
C SYNC
FSC IN
VCC
C OUT
HD OUT
SH OUT
VCO
(IC201 24) SYNC
(IC201 61) FSC
(IC201 10) DOP
PB 4.9V
PJ-70 BOARD (See Pa
VS-126 BOARD (See Page 4-29, 4-32, 4-36, 4-38, 4-41)
IC201 39 REC
IC201 7 PB
IC201 41 PB
IC201 10 PB
IC201 21 23 PB
IC201 21 23 REC
IC201 8 REC
IC201 45 PB
IC201 59 REC/PB
IC201 62 REC/PB
IC201 30 REC
IC201 5 PB
IC201 5 REC
IC201 14 PB
IC201 14 REC
IC201 32 PB
IC201 24 REC/PB
IC201 36 PB
IC1501 15 PB
IC1501 2 PB
IC1501 11 PB
0.5Vp-p
0.4Vp-p
0.35Vp-p
0.6Vp-p
0.36Vp-p
2Vp-p
0.3Vp-p
0.2Vp-p
1.5Vp-p
2.2Vp-p
0.16μsec
4.43MHz
09


H18 MODEL
VIDEO (2)
(HE-20 BOARD)
EMP
Y COMB OUT
CN205
DOS/MASK
AGC
EXT Y
LINE Y
PB/EE Y
PB/EE V
DOS
HPF
NR
REC/PB Y
IC205
AMP
IC201 30 REC
IC201 5 PB
IC201 5 REC
IC201 14 REC
IC201 14 PB
IC201 32 PB
IC201 36 PB
IC201 24 REC/PB
IC201 62 REC/PB
Y COMB OUT (REC/PB Y)
STANDARD 8 MODEL
Q232, 236, 238, 241, 242, 247, 266
FILTER
VIDEO 4.9V
MIX
VIDEO OUT
Q204
Q265
SYNC
EXT C
PB/EE C
SHP
VCC
VG1
CK
SI
CS
SWP
VTR SCK
DATA TO SLVE
VIDEO CS
VI SWP
(SERVO IC505 96)
BUS DECODER
Q956
BUFFER
COMP REC
(SYSCON IC505 25)
CAM REC C
PB C
EE PB C
IC251
INPUT/OUTPUT SWITCH
C SW (Q225)
DOS VDB
DOS VDW
EVF VDW
EVF VDB
C MUTE (Q216, 217)
CLAMP
DOS1
DOS2
MUTE1
MUTE2
MUTE3
LINE Y
CAM Y
LINE C
CAM C
IC251 17 25 CAMERA
IC251 19 PB
IC251 19 REC
IC251 11 PB
IC251 15 29 CAMERA
IC251 3 7 PB
IC251 21 PB
IC251 21 REC
(Q1259) *IN/OUT
Q1253
Q1254
Q1257
ATT BUFFER
Q1252
S IN
V IN/OUT
(SYSCON IC509 93)
Q201, 214
LOGIC
Q253
Q255
LEVEL SHIFT
* SP/LP
COMP REC (IC505 25)
SP/LP (IC505 71)
V MUTE (IC505 47)
JOG (IC505 4)
CAM/LINE (IC505 26)
VA PB MODE (IC505 95)
JOG VD (IC505 3)
V IN/OUT (IC505 93)
SYSTEM CONTROL
Q1251, Q1252
Q1259
*IN/OUT
Q225, 226, 227, 228
C SW
PB 4.9V
COMP REC (SYSCON IC505 25)
VA PB MODE (SYSCON IC505 95)
VIDEO 4.9V
Q216, 217
V MUTE
C MUTE
DS VDB
IC1501 15 PB
IC1501 2 PB
IC1501 11 PB
PAL JOG HD
Q214, 217
DOP
JOG
IC1501
JOG CHROMA PROCESS
CN204
CN1502
Q1506
LPF
PB C IN
C SYNC
FSC IN
VCC
C OUT
HD OUT
SH OUT
VCO
(IC201 24) SYNC
(IC201 61) FSC
(IC201 10) DOP
JOG (IC505 4)
PJ-70 BOARD (See Page 4-48)
IC951
CONVERTER
CS (IC503 34)
DATA TO SVAE (IC503 76)
SCK (IC503 77)
D/A CS CS DA (IC503 37)
SWP (IC505 97)
VI SYNC (IC505 96)
SERVO
SYNC → SYNC (IC201 24)
VIDEO (2)
TERMINAL BOARD
J201
VIDEO
S VIDEO
VIDEO I/O
Y IN/OUT
C IN/OUT
S IN
CN201
H18 MODEL
CN206
EVF Y
EVF C
LCD (SB-18:3"LCD MODEL) (SB-19:4"LCD MODEL)
Q958, 959, 960
MIX FILTER
W/B EVF Y
CN203
FSC
CAM Y
CAM C
RE H
SYNC
EVF VDW
DS VDW
DS VDB
EVF VDB
DOS VDW
DOS VDB
CAMERA (VC-163)
SYNC (IC201 24)
D204
Q219
BUFFER
FCS (IC201 61)
CN202
1.5M DEV
AUDIO FADER
AU FSC
1.7M DEV
MX ADJ
AUDIO (AU-185)

3-4. VIDEO (2) BLOCK DIAGRAM

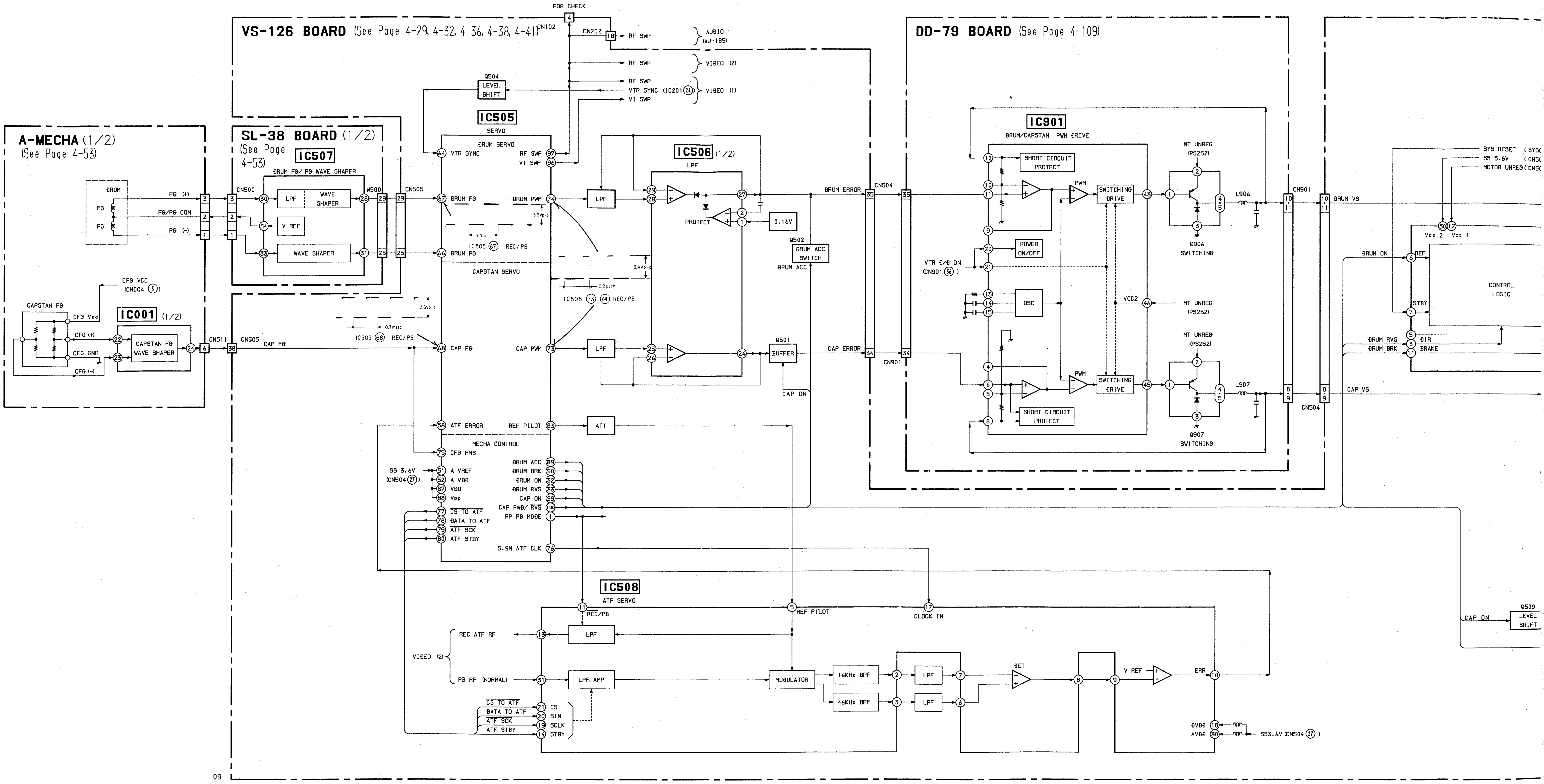

VS-126 BOARD
(See Page 4-29, 4-32, 4-36, 4-38, 4-41)
HE-20 BOARD (See Page 4-45)
HI8 MODEL
Q116, 118, 121, 124, 125, 131, 136
FILTER
*L/E (CN205 ⑱)
(Q255) *SP/LP
E*MP (CN205 ⑧)
CN102
FOR CHECK
PB PCM RF
PB RF
RF SWP
REC 2
IC102
REC/PB AMP
RF SWP
AT 1CH 1
AT 2CH 2
AT Q 3
AT FO 4
VIDEO HEAD CH1
1CH A (X)
VIDEO HEAD CH1
2CH A (X)
FLYING ERASE
FE (X)
CN101
PB AMP
FILTER
Q109, 114, 132, 133
STANDARD 8 MODEL
STANDARD 8 MODEL
Q111, 112, 117, Q227, 228, Q101
FILTER
V MUTE
JOG
VA PB MODE
0.4Vp-p
0.16μsec
IC102 ⑧ ⑭ PB
AGC
Q126
BUFFER
Q135
RP PB MODE
Q105, Q102
MUTE SW
VA PB MODE
V MUTE
RP PB MODE
0.36Vp-p
0.16μsec
IC102 ⑥ REC
4Vp-p
0.16μsec
IC102 ㉗ ㉞ REC
REC AMP
SW
MIX AMP
STANDARD 8 MODEL
Q113, 115, 119
FILTER
0.4Vp-p
IC102 ④ REC
VCC 1CH
VCC 2CH
RP 5V
1CH CONT
2CH CONT
Q134
RP PB MODE
REC Y
REC LOW
REC C
Q101-104
ERASE OSC
FE ON
*ME/MP
09
PB RF
ME/MP (IC505 ㊷)
FE ON (IC505 ②)
RP PB MODE (IC505 ①)
VA PB MODE (IC505 ㊺)
JOG (IC505 ④)
V MUTE (IC505 ㊼)
SYSTEM CONTROL
RF SWP (IC505 ㊾)
PB RF (X)
REC ATF RF (IC505 ⑬)
SERVO
PB C RF
SOFT LIM OUT (L)
*SP/LP (Q255)
BOP
Ⓒ R (IC951 ⑱)
Ⓓ R (IC951 ⑳)
Ⓔ R (IC951 ㉑)
Ⓕ R (IC951 ㉒)
Ⓐ R (IC951 ⑮)
Ⓑ R (IC951 ⑯)
Ⓛ V (IC951 ㉞)
Ⓜ V (IC951 ㊲)
Ⓙ V (IC951 ⑩)
VIDEO (1)
REC Y RF (IC201 ㊺)
REC C RF (IC201 ⑧)
HI8 MODEL
*L/E
E*MP
(Q129) *ME/MP
BOP
PB Y RF
REC Y RF
CN205
CN202
PB RF
REC AFM RF
AUDIO (AU-185)
CN503
BOP
LCD (SB-18:3"LCD MODEL) (SB-19:4"LCD MODEL)
CN1101
BOP
PB Y RF
IC1101 (1/2)
Y RF AMP
BOP
LPF
LPF
NORMAL
HI8
LIM
LPF
LPF
NORM
HI8
NORMAL
HI8
0.1Vp-p
0.16μsec
IC1101 ㊶ PB
IC1102 (1/3)
*ME/MP
*ME/MP
Q1101
E*MP
*E/L (IC1102 ⑧)
*L/E
*L/E (IC1102 ⑩)
PB 4.9V (IC1102 ⑫)
VIDEO 4.9V (CN1101 ㉔)
Q1111
0.3Vp-p
FL1102 ① PB
FL1102
COMB OUT LPF
Q1119
CUT-OFF FREQ.
0.22Vp-p
0.16μsec
IC1101 ㉚ REC
0.28Vp-p
0.16μsec
IC1101 ⑱ REC
IC1101 (1/2)
LIM
Q1110
BUFFER
CHROMA TRAP
Q1107
TRAP SWITCH
*ME/MP (IC1102 ⑥)
AFM TRAP
Q1103
BUFFER
LPF
Q1102
CUT-OFF FREQ SWITCH
PB Y RF

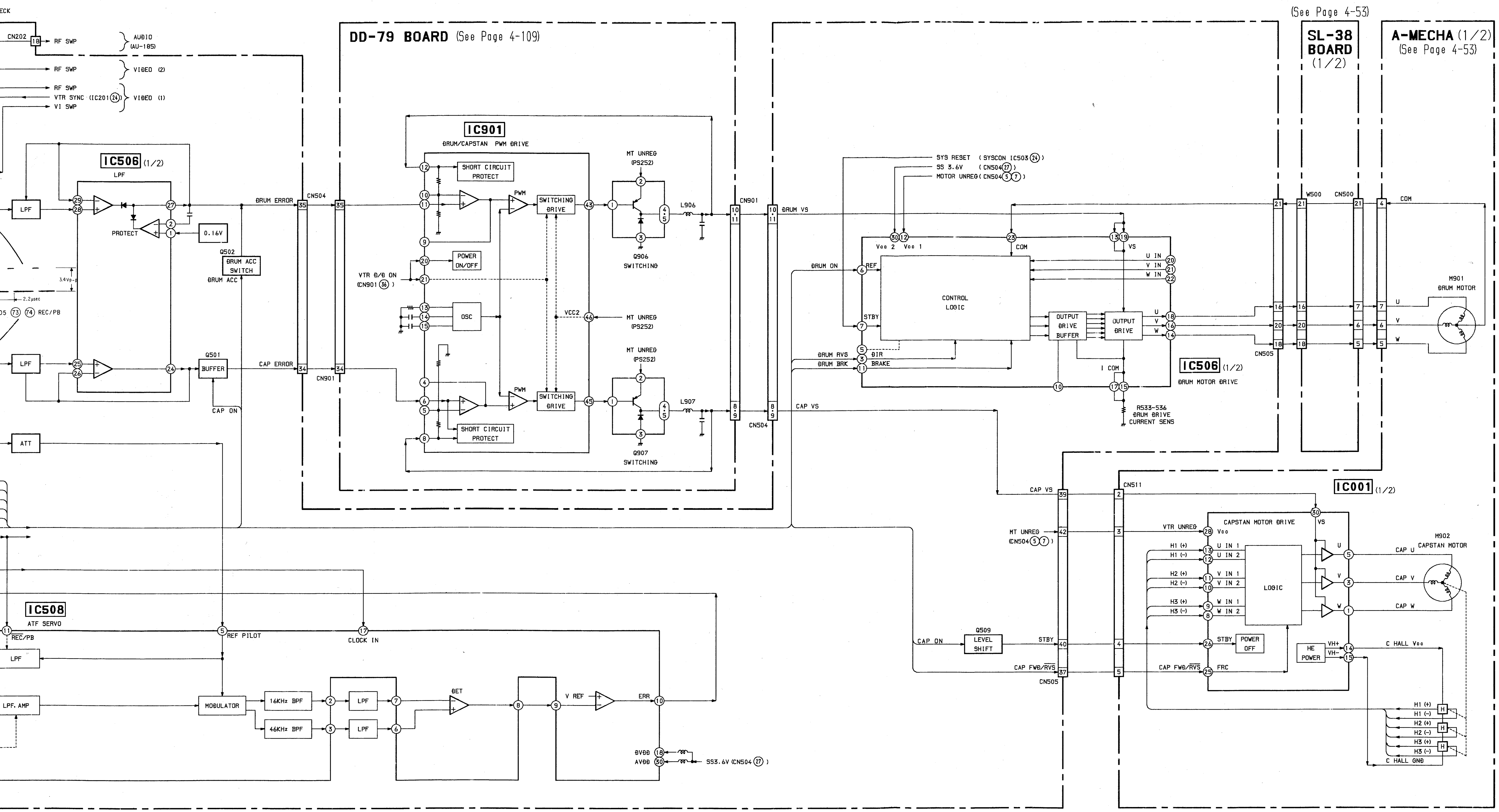
H18 MODEL: CCD-TRV60E/TRV70E, FV 876
STANDARD 8 MODEL: CCD-TRV30E/TRV40E/TRV50E, FV 836
3"LCD MODEL: CCD-TRV30E/TRV40E/TRV60E, FV 836
4"LCD MODEL: CCD-TRV50E/TRV70E, FV 876



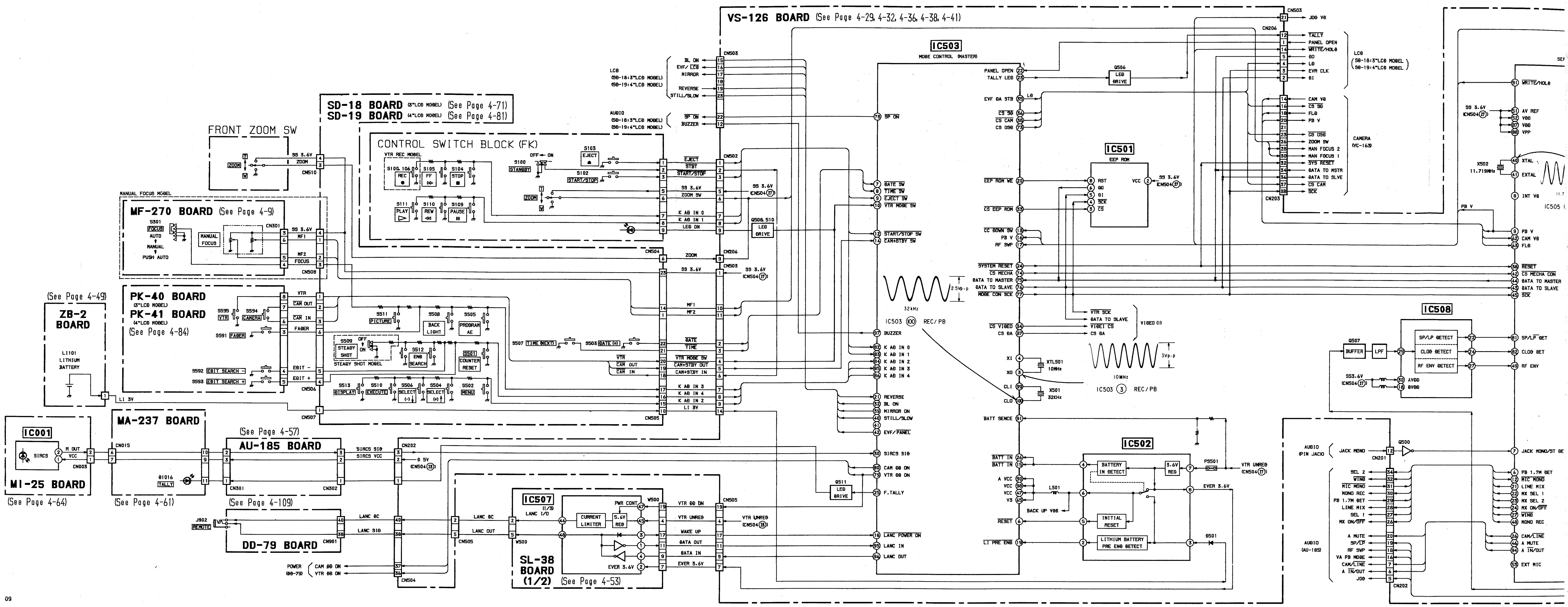
H18 MODEL
HE-20 BOARD (See Page 4-45)
IC1101 (1/2)
Y RF AMP
IC1102 (1/3)
CN1101
DOP
PB Y RF
LPF
NORMAL
H18
LIM
DCA
H18/NORMAL DETECT
CAP ON
PB
L/E
E/C
E DET
EDIT
SOFT LIM OUT
*E/C
*L/E
PB 4.9V
*SP/LP
SYSCON (VS-126)
DEMOD OUT
PB Y OUT
VIDEO (1) (VS-126)
Y COMB OUT
EMP
REC Y RF
IC1101 (41) PB
IC1101 (16) PB
0.1Vp-p
0.36Vp-p
0.16μsec
*ME/MP
E*MP
Q1101
Q1111
Q1113, 1115
Q1138
BUFFER
TRAP
FL1101
DEMOD LPF
EQ.
Q1117
Q1123, 1125, 1114
PEAKING AMP
Q1120, 1127, Q1143
Q SWITCH
VIDEO 4.9V (CN1101 (24))
Q1125 (E) PB
0.5Vp-p
FL1102 (1) PB
FL1101 (1) PB
0.3Vp-p
0.2Vp-p
FL1102
COMB OUT LPF
Q1121
Q1126, 1128, 1130
EQ (PB) BUFFER (REC)
Q1129
Q1133, 1137
Q1119
CUT-OFF FREQ.
Q1134, 1136, 1139, Q1135
TRAP ON/OFF SWITCH
EQ. SWITCH
Q1132
Q1131
Q1137 (E) PB
0.6Vp-p
Q1102
IC1101 (30) REC
0.22Vp-p
IC1101 (18) REC
0.28Vp-p
Q1110
CHROMA TRAP
Q1107
TRAP SWITCH
AFM TRAP
Q1103
CUT-OFF FREQ SWITCH
(IC1102 (8))
(IC1102 (10))
(IC1102 (12))
(IC1102 (6))
(CN1101 (12))
(CN1101 (16))
(CN1101 (22))
(IC1102 (2))
PB RF
ME/MP (IC505 (72))
FE ON (IC505 (2))
RP PB MODE (IC505 (1))
VA PB MODE (IC505 (95))
JOG (IC505 (4))
V MUTE (IC505 (47))
SYSTEM CONTROL
RF SWP (IC505 (97))
PB RF (N)
REC ATF RF (IC505 (13))
SERVO
PB C RF
SOFT LIM OUT (L)
*SP/LP (Q255)
VA PB MODE
STANDARD 8 MODEL
Q111, 112, 117, Q227, 228, D101
FILTER
V MUTE
JOG
DOP
(C) R (IC951 (18))
(B) R (IC951 (20))
(E) R (IC951 (21))
(F) R (IC951 (22))
(A) R (IC951 (15))
(D) R (IC951 (16))
(L) V (IC951 (36))
(M) V (IC951 (37))
(J) V (IC951 (10))
VIDEO (1)
RP PB MODE
Q113, 115, 119
REC Y RF (IC201 (45))
REC C RF (IC201 (8))
IC102 (4) REC
0.4Vp-p
H
H18 MODEL
(Q129) *ME/MP
REC Y RF
CN205
CN202
PB RF
REC AFM RF
AUDIO (AU-185)
CN503
LCD (SD-18:3"LCD MODEL) (SD-19:4"LCD MODEL)

3-5. SERVO BLOCK DIAGRAM

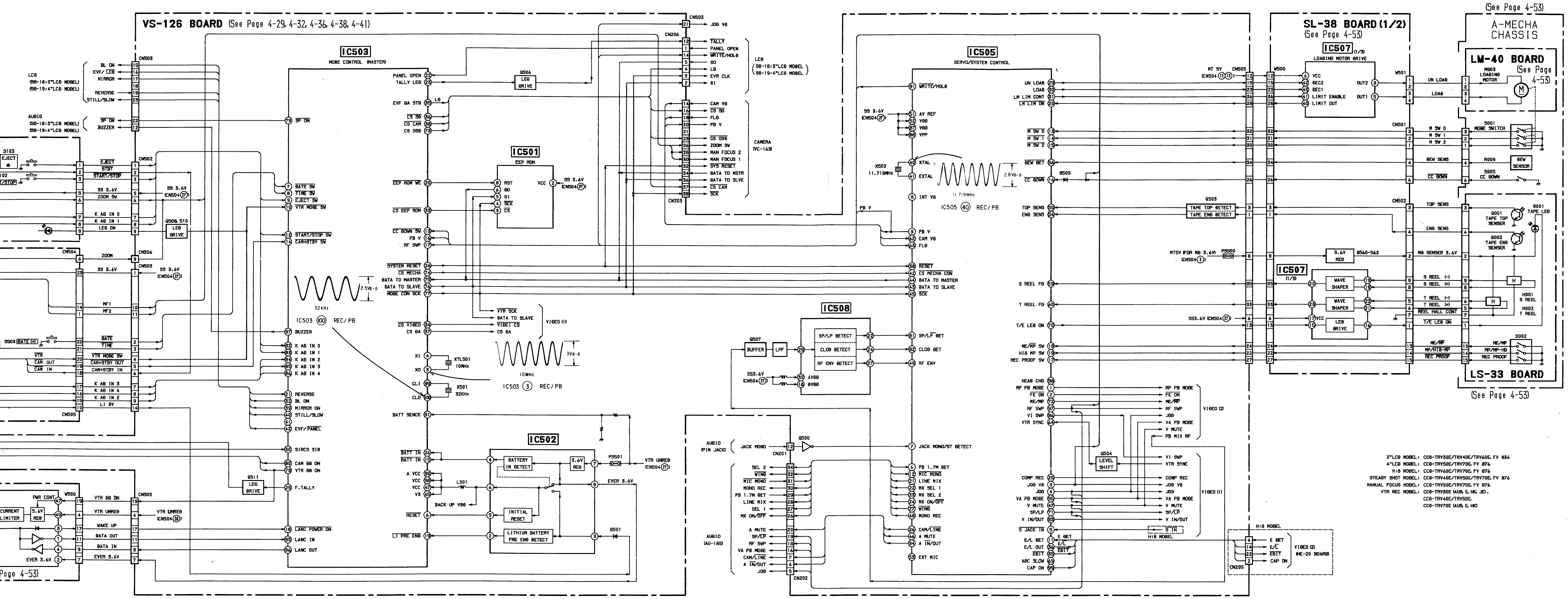

FOR CHECK
VS-126 BOARD (See Page 4-29, 4-32, 4-36, 4-38, 4-41)
CN102
CN202
RF SWP
AUDIO (AU-185)
VIDEO (2)
VTR SYNC (IC201 ㉔)
VI SWP
VIDEO (1)
Q504
LEVEL SHIFT
IC505
SERVO
DRUM SERVO
VTR SYNC
VI SWP
A-MECHA (1/2) (See Page 4-53)
SL-38 BOARD (1/2) (See Page 4-53)
IC507
DRUM FG/ PG WAVE SHAPER
DRUM
FG
PG
FG (+)
FG/PG COM
PG (-)
CN500
LPF
WAVE SHAPER
V REF
W500
CN505
DRUM FG
DRUM PWM
3.6Vp-p
3.4msec
IC505 ㊼ REC/PB
DRUM PG
CAPSTAN SERVO
3.4Vp-p
2.2μsec
IC505 ㊸ ㊹ REC/PB
IC506 (1/2)
LPF
PROTECT
0.16V
Q502
DRUM ACC SWITCH
DRUM ACC
DRUM ERROR
CN504
CFG VCC (CN004 ③)
CAPSTAN FG
CFG Vcc
CFG (+)
CFG GND
CFG (-)
IC001 (1/2)
CAPSTAN FG WAVE SHAPER
CN511
CAP FG
3.6Vp-p
0.7msec
IC505 ⑱ REC/PB
CAP PWM
Q501
BUFFER
CAP ERROR
CAP ON
CN901
ATF ERROR
REF PILOT
ATT
MECHA CONTROL
CFG HMS
SS 3.6V (CN504 ㉗)
A VREF
A VDD
VDD
Vpp
DRUM ACC
DRUM BRK
DRUM ON
DRUM RVS
CAP ON
CAP FWD/ RVS
RP PB MODE
CS TO ATF
DATA TO ATF
ATF SCK
ATF STBY
5.9M ATF CLK
IC508
ATF SERVO
REC/PB
REF PILOT
CLOCK IN
REC ATF RF
VIDEO (2)
PB RF (NORMAL)
LPF. AMP
MODULATOR
16KHz BPF
46KHz BPF
DET
V REF
ERR
CS
SIN
SCLK
STBY
DVDD
AVDD
SS3.6V (CN504 ㉗)
09
DD-79 BOARD (See Page 4-109)
IC901
DRUM/CAPSTAN PWM DRIVE
SHORT CIRCUIT PROTECT
PWM
SWITCHING DRIVE
POWER ON/OFF
VTR D/D ON (CN901 ㊱)
OSC
VCC2
MT UNREG (PS252)
Q906 SWITCHING
Q907 SWITCHING
L906
L907
DRUM VS
CAP VS
SYS RESET (SYS
SS 3.6V (CN5
MOTOR UNREG (CN5
Vcc 2
Vcc 1
DRUM ON
REF
STBY
CONTROL LOGIC
DRUM RVS
DRUM BRK
DIR
BRAKE
CAP ON
Q509
LEVEL SHIFT


ECK
CN202
18
RF SWP
AUDIO (AU-185)
RF SWP
VIDEO (2)
RF SWP
VTR SYNC (IC201 ㉔)
VI SWP
VIDEO (1)
DD-79 BOARD (See Page 4-109)
IC901
DRUM/CAPSTAN PWM DRIVE
SHORT CIRCUIT PROTECT
PWM
SWITCHING DRIVE
POWER ON/OFF
OSC
VCC2
MT UNREG (PS252)
Q906 SWITCHING
Q907 SWITCHING
L906
L907
VTR D/D ON (CN901 ㊱)
IC506 (1/2)
LPF
PROTECT
0.16V
Q502 DRUM ACC SWITCH
DRUM ACC
DRUM ERROR
CN504
CN901
Q501 BUFFER
CAP ERROR
CAP ON
3.4Vp-p
2.2μsec
73 74 REC/PB
ATT
IC508
ATF SERVO
REC/PB
LPF
LPF. AMP
REF PILOT
CLOCK IN
MODULATOR
16KHz BPF
46KHz BPF
DET
V REF
ERR
DVDD
AVDD
SS3.6V (CN504 ㉗)
DRUM VS
SYS RESET (SYSCON IC503 ㉔)
SS 3.6V (CN504 ㉗)
MOTOR UNREG (CN504 ⑤⑦)
Vcc 2
Vcc 1
COM
VS
U IN
V IN
W IN
DRUM ON
REF
STBY
CONTROL LOGIC
OUTPUT DRIVE BUFFER
OUTPUT DRIVE
DRUM RVS
DRUM BRK
DIR
BRAKE
I COM
R533-536 DRUM DRIVE CURRENT SENS
IC506 (1/2)
DRUM MOTOR DRIVE
CN505
CAP VS
(See Page 4-53)
SL-38 BOARD (1/2)
W500
CN500
A-MECHA (1/2) (See Page 4-53)
COM
M901 DRUM MOTOR
U
V
W
CN511
IC001 (1/2)
MT UNREG (CN504 ⑤⑦)
VTR UNREG
CAPSTAN MOTOR DRIVE
Vcc
H1 (+)
H1 (-)
U IN 1
U IN 2
H2 (+)
H2 (-)
V IN 1
V IN 2
H3 (+)
H3 (-)
W IN 1
W IN 2
LOGIC
M902 CAPSTAN MOTOR
CAP U
CAP V
CAP W
CAP ON
Q509 LEVEL SHIFT
STBY
POWER OFF
HE POWER
VH+
VH-
C HALL Vcc
CAP FWD/RVS
FRC
C HALL GND
CN505

3-6. SYSTEM CONTROL BLOCK DIAGRAM

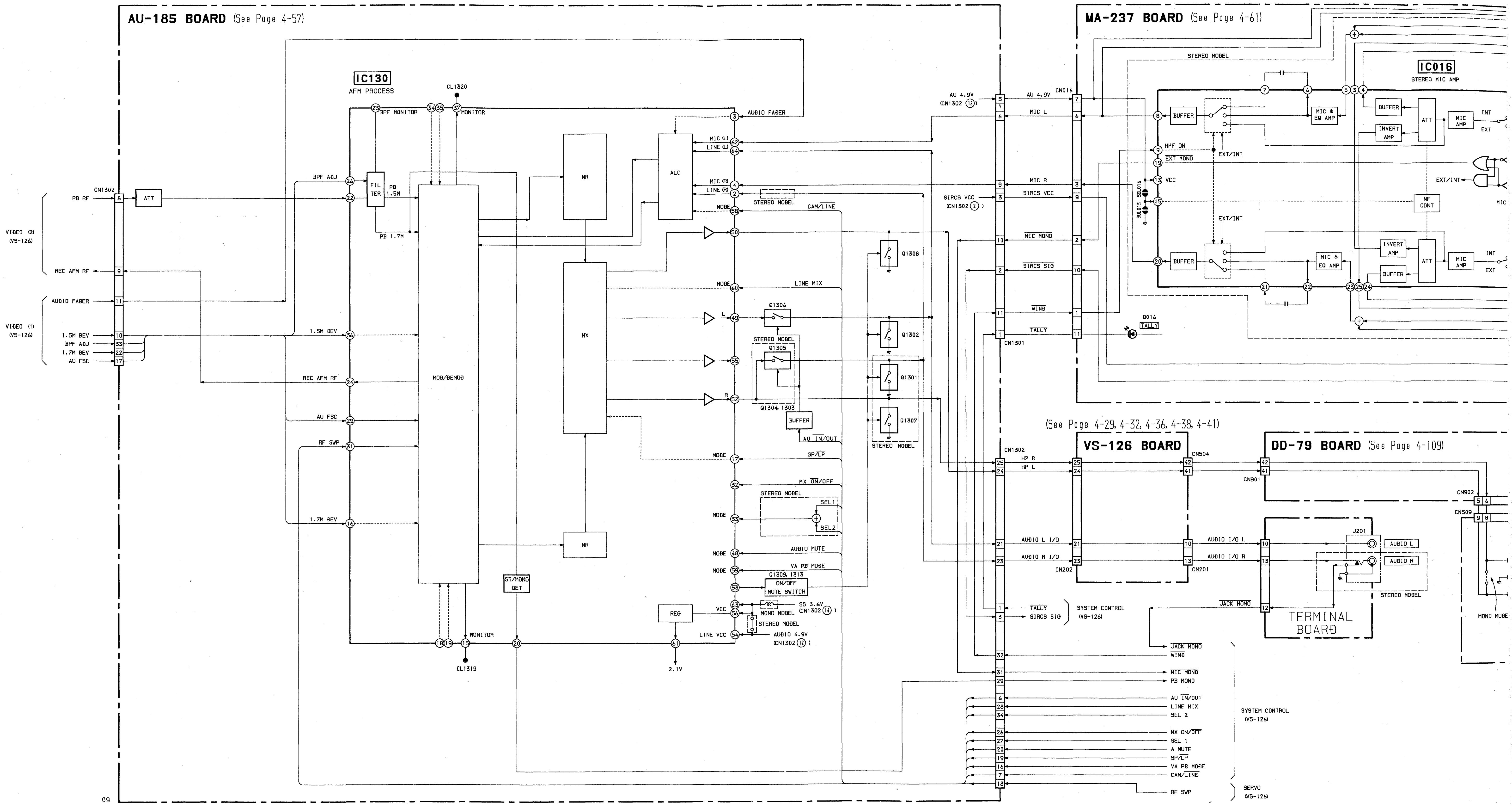


VS-126 BOARD (See Page 4-29, 4-32, 4-36, 4-38, 4-41)
IC503
MODE CONTROL (MASTER)
IC501
EEP ROM
IC502
IC508
IC507
SD-18 BOARD (3"LCD MODEL) (See Page 4-71)
SD-19 BOARD (4"LCD MODEL) (See Page 4-81)
FRONT ZOOM SW
CONTROL SWITCH BLOCK (FK)
MF-270 BOARD (See Page 4-9)
MANUAL FOCUS MODEL
PK-40 BOARD
PK-41 BOARD
(See Page 4-84)
ZB-2 BOARD
(See Page 4-49)
LI101 LITHIUM BATTERY
IC001
MI-25 BOARD
(See Page 4-64)
MA-237 BOARD
(See Page 4-61)
AU-185 BOARD
(See Page 4-57)
DD-79 BOARD
(See Page 4-109)
SL-38 BOARD (1/2)
(See Page 4-53)
CN503
CN206
CN502
CN504
CN505
CN506
CN507
CN508
CN510
CN301
CN302
CN202
CN201
CN203
JOG VD
TALLY
PANEL OPEN
WRITE/HOLD
LCD (SD-18:3"LCD MODEL) (SD-19:4"LCD MODEL)
CAMERA (VC-163)
EVR CLK
CAM VD
ZOOM SW
MAN FOCUS 2
MAN FOCUS 1
SYS RESET
DATA TO MSTR
DATA TO SLVE
CS CAM
SCK
SP ON
BUZZER
DATE SW
TIME SW
EJECT SW
VTR MODE SW
START/STOP SW
CAM+STBY SW
KEY AD IN 0
KEY AD IN 1
KEY AD IN 2
KEY AD IN 3
KEY AD IN 4
REVERSE
BL ON
MIRROR ON
STILL/SLOW
EVF/PANEL
SIRCS SIG
CAM DD ON
VTR DD ON
F.TALLY
LANC POWER ON
LANC IN
LANC OUT
32kHz
IC503 (100) REC/PB
10MHz
IC503 (3) REC/PB
2.5Vp-p
3Vp-p
XTL501 10MHz
X501 32kHz
X502 11.719MHz
BATT SENCE
BATT IN
A VCC
BACK UP VDD
RESET
LI PRE END
BATTERY IN DETECT
3.6V REG
INITIAL RESET
LITHIUM BATTERY PRE END DETECT
PS501
VTR UNREG (CN504 (27))
EVER 3.6V
D501
LED DRIVE
Q506
Q508, 510
Q511
BUFFER
LPF
SP/LP DETECT
CLOG DETECT
RF ENV DETECT
Q500
JACK MONO
JACK MONO/ST DE
AUDIO (PIN JACK)
AUDIO (AU-185)
PB 1.7M DET
MIC MONO
LINE MIX
MX SEL 1
MX SEL 2
MX ON/OFF
WIND
MONO REC
CAM/LINE
A MUTE
A IN/OUT
EXT MIC
SS 3.6V
ZOOM
FOCUS
MANUAL FOCUS
S301
AUTO
MANUAL
PUSH AUTO
MF1
MF2
VTR
CAM OUT
CAM IN
FADER
EDIT -
EDIT +
LI 3V
S100 STANDBY
S103 EJECT
S102 START/STOP
S100, 106 REC
S105 FF
S104 STOP
S111 PLAY
S110 REW
S109 PAUSE
S509 STEADY SHOT
STEADY SHOT MODEL
S511 PICTURE
S508 BACK LIGHT
S505 PROGRAM AE
S512 END SEARCH
S501 COUNTER RESET
S513 DISPLAY
S510 EXECUTE
S506 SELECT (-)
S504 SELECT (+)
S502 MENU
S507 TITLE (NEXT)
S503 DATE (4)
S595 VTR
S594 CAMERA
S591 FADER
S592 EDIT SEARCH -
S593 EDIT SEARCH +
SIRCS
R OUT
VCC
CN015
CN003
D1016 TALLY
J902 REMOTE
LANC DC
LANC SIG
POWER (DD-79)
CAM DD ON
VTR DD ON
IC507
LANC I/O
CURRENT LIMITER
5.6V REG
PWR CONT
W500
WAKE UP
DATA OUT
DATA IN
VTR UNREG
XI
XO
CLI
CLO
AV REF
XTAL
EXTAL
INT VD
PB V
FLD
RESET
CS MECHA CON
DATA TO MASTER
DATA TO SLAVE
SCK
SP/LP DET
CLOG DET
RF ENV
VIDEO (1)
VTR SCK
VIDEO CS
CS DA
AVDD
DVDD

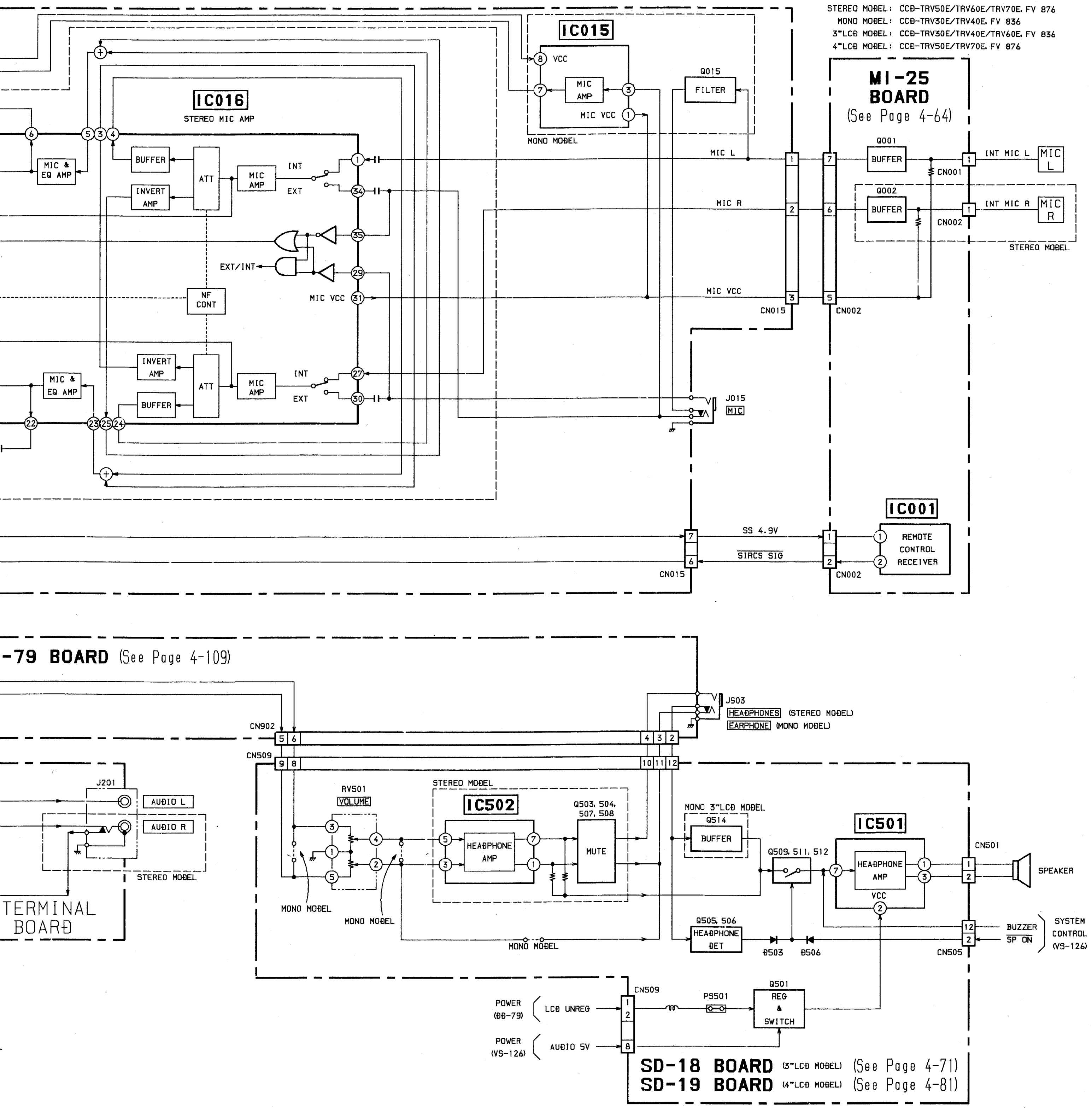

VS-126 BOARD (See Page 4-29, 4-32, 4-36, 4-38, 4-41)
IC503
MODE CONTROL (MASTER)
IC501
EEP ROM
IC502
IC505
SERVO/SYSTEM CONTROL
IC508
SL-38 BOARD (1/2)
(See Page 4-53)
IC507 (1/3)
LOADING MOTOR DRIVE
A-MECHA CHASSIS
(See Page 4-53)
LM-40 BOARD
(See Page 4-53)
M903 LOADING MOTOR
S001 MODE SWITCH
LS-33 BOARD
(See Page 4-53)
CAMERA (VC-163)
LCD (SD-18:3"LCD MODEL) (SD-19:4"LCD MODEL)
VIDEO (1)
VIDEO (2)
AUDIO (PIN JACK)
AUDIO (AU-185)
HI8 MODEL
VIDEO (2) (HE-20 BOARD)
IC503 (100) REC/PB
IC503 (3) REC/PB
IC505 (40) REC/PB
32kHz
10MHz
11.719MHz
2.5Vp-p
3Vp-p
2.8Vp-p
BATTERY IN DETECT
3.6V REG
INITIAL RESET
LITHIUM BATTERY PRE END DETECT
SP/LP DETECT
CLOG DETECT
RF ENV DETECT
BUFFER
LPF
LEVEL SHIFT
WAVE SHAPER
LED DRIVE
CURRENT LIMITER
5.6V REG

3"LCD MODEL: CCD-TRV30E/TRV40E/TRV60E, FV 836
4"LCD MODEL: CCD-TRV50E/TRV70E, FV 876
HI8 MODEL: CCD-TRV60E/TRV70E, FV 876
STEADY SHOT MODEL: CCD-TRV40E/TRV50E/TRV70E, FV 876
MANUAL FOCUS MODEL: CCD-TRV50E/TRV70E, FV 876
VTR REC MODEL: CCD-TRV30E (AUS, E, HK, JE),
CCD-TRV40E/TRV50E,
CCD-TRV70E (AUS, E, HK)

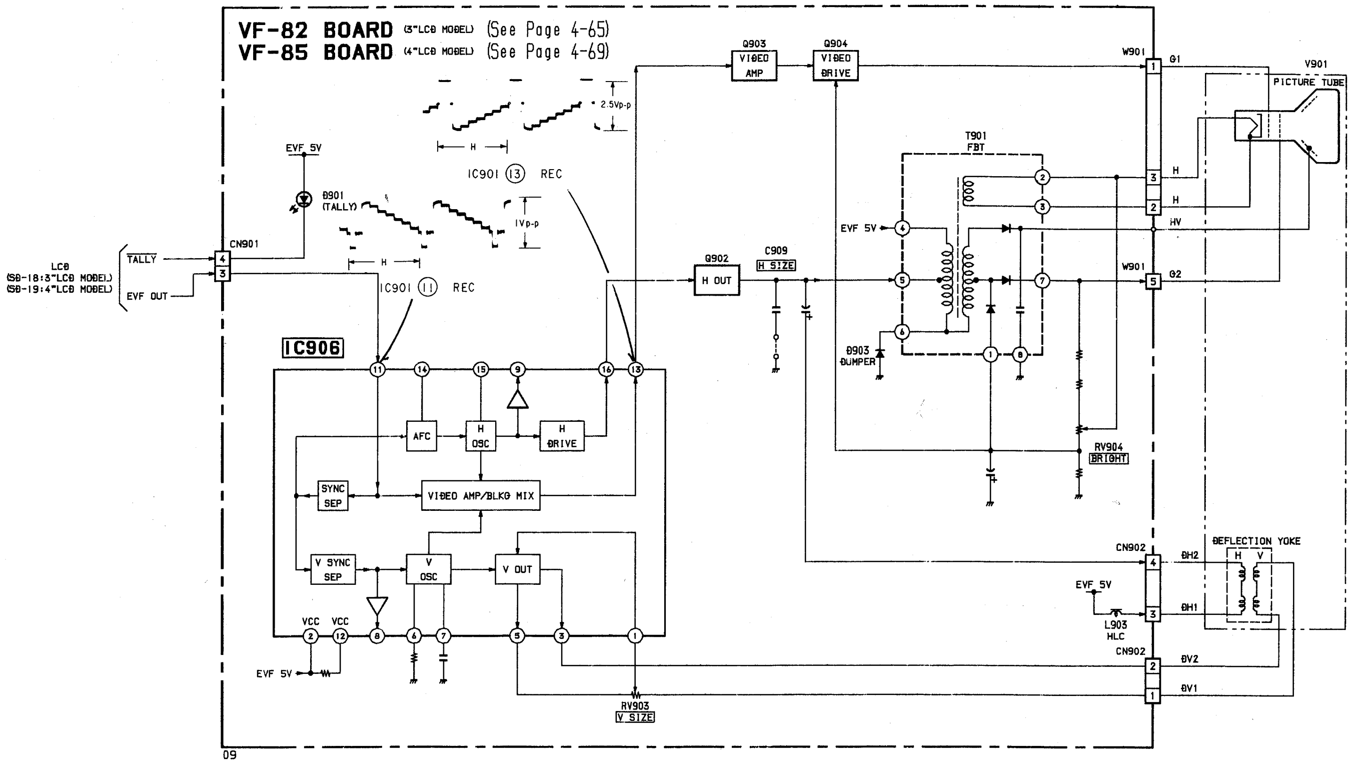
3-7. AUDIO BLOCK DIAGRAM


AU-185 BOARD (See Page 4-57)
IC130
AFM PROCESS
CL1320
BPF MONITOR
MONITOR
AUDIO FADER
MIC (L)
LINE (L)
MIC (R)
LINE (R)
MODE
STEREO MODEL
CAM/LINE
ALC
NR
MX
NR
MOD/DEMOD
FILTER
PB 1.5M
PB 1.7M
BPF ADJ
CN1302
PB RF
ATT
VIDEO (2) (VS-126)
REC AFM RF
AUDIO FADER
VIDEO (1) (VS-126)
1.5M DEV
BPF ADJ
1.7M DEV
AU FSC
RF SWP
LINE MIX
Q1306
Q1305
Q1304, 1303
BUFFER
AU IN/OUT
SP/LP
MX ON/OFF
SEL1
SEL2
AUDIO MUTE
VA PB MODE
Q1309, 1313
ON/OFF MUTE SWITCH
Q1308
Q1302
Q1301
Q1307
ST/MONO DET
REG
VCC
MONO MODEL
SS 3.6V (CN1302 ⑭)
LINE VCC
AUDIO 4.9V (CN1302 ⑫)
MONITOR
CL1319
2.1V
L
R
09
AU 4.9V (CN1302 ⑫)
SIRCS VCC (CN1302 ②)
CN1301
MIC L
MIC R
SIRCS VCC
MIC MONO
SIRCS SIG
WIND
TALLY
MA-237 BOARD (See Page 4-61)
CN016
STEREO MODEL
IC016
STEREO MIC AMP
BUFFER
MIC & EQ AMP
INVERT AMP
ATT
MIC AMP
INT
EXT
HPF ON
EXT MONO
EXT/INT
VCC
SOL015
SOL016
NF CONT
MIC
D016
TALLY
(See Page 4-29, 4-32, 4-36, 4-38, 4-41)
VS-126 BOARD
CN1302
HP R
HP L
CN504
DD-79 BOARD (See Page 4-109)
CN901
CN902
CN509
AUDIO L I/O
AUDIO R I/O
CN202
CN201
AUDIO I/O L
AUDIO I/O R
J201
AUDIO L
AUDIO R
STEREO MODEL
JACK MONO
TERMINAL BOARD
MONO MODE
TALLY
SIRCS SIG
SYSTEM CONTROL (VS-126)
JACK MONO
WIND
MIC MONO
PB MONO
AU IN/OUT
LINE MIX
SEL 2
MX ON/OFF
SEL 1
A MUTE
SP/LP
VA PB MODE
CAM/LINE
SYSTEM CONTROL (VS-126)
RF SWP
SERVO (VS-126)

STEREO MODEL: CCD-TRV50E/TRV60E/TRV70E, FV 876
MONO MODEL: CCD-TRV30E/TRV40E, FV 836
3"LCD MODEL: CCD-TRV30E/TRV40E/TRV60E, FV 836
4"LCD MODEL: CCD-TRV50E/TRV70E, FV 876

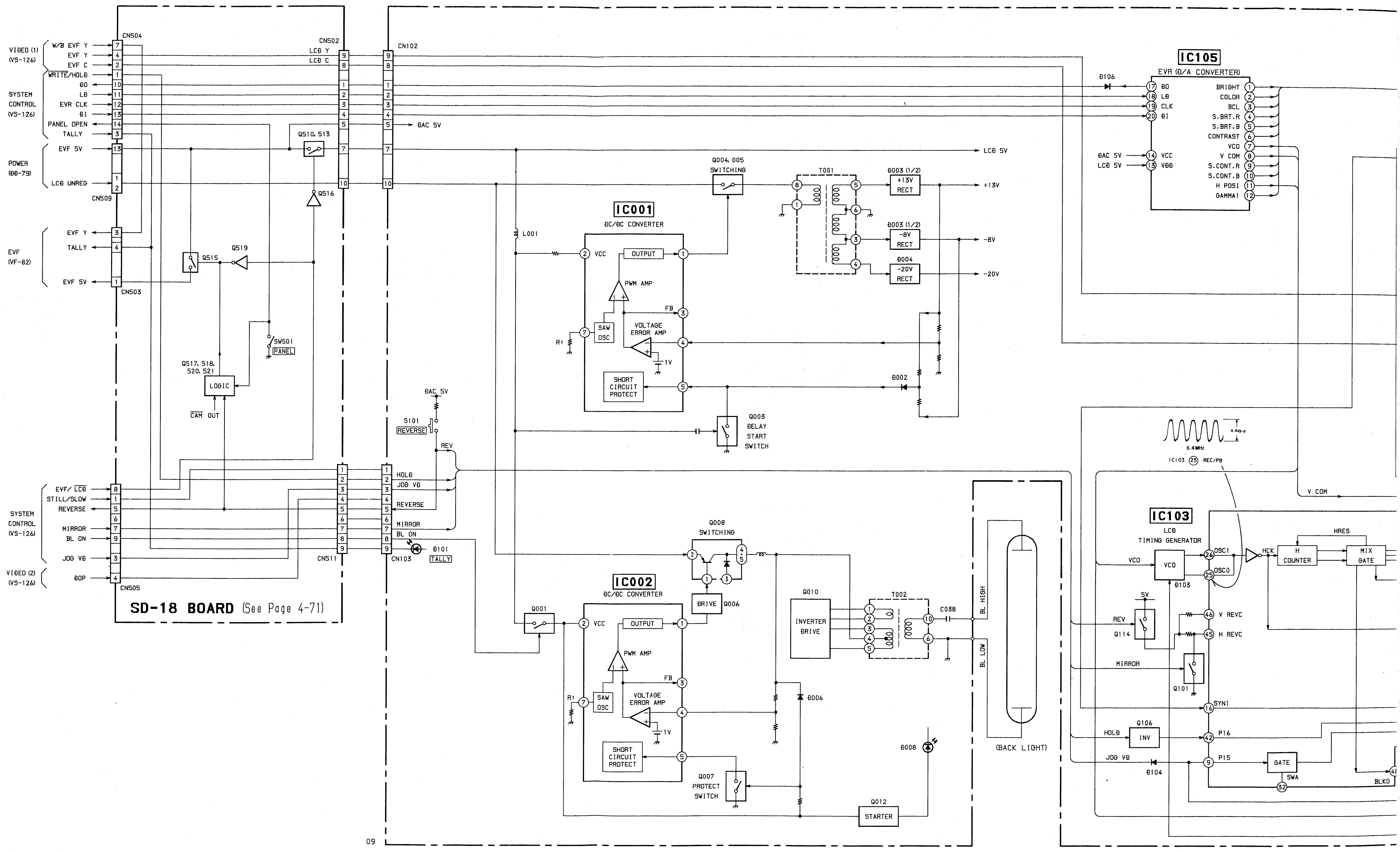

IC015
VCC
MIC AMP
MIC VCC
MONO MODEL
Q015
FILTER
IC016
STEREO MIC AMP
MIC & EQ AMP
BUFFER
ATT
MIC AMP
INVERT AMP
INT
EXT
EXT/INT
NF CONT
MIC VCC
MIC L
MIC R
MIC VCC
CN015
MI-25 BOARD
(See Page 4-64)
Q001
BUFFER
CN001
Q002
BUFFER
CN002
INT MIC L
MIC L
INT MIC R
MIC R
STEREO MODEL
J015
MIC
IC001
REMOTE CONTROL RECEIVER
SS 4.9V
SIRCS SIG
-79 BOARD (See Page 4-109)
J503
HEADPHONES (STEREO MODEL)
EARPHONE (MONO MODEL)
CN902
CN509
J201
AUDIO L
AUDIO R
STEREO MODEL
TERMINAL BOARD
RV501
VOLUME
MONO MODEL
IC502
HEADPHONE AMP
Q503, 504, 507, 508
MUTE
MONO 3"LCD MODEL
Q514
BUFFER
Q509, 511, 512
IC501
HEADPHONE AMP
VCC
CN501
SPEAKER
Q505, 506
HEADPHONE DET
D503
D506
MONO MODEL
CN505
BUZZER
SP ON
SYSTEM CONTROL (VS-126)
POWER (DD-79)
LCD UNREG
POWER (VS-126)
AUDIO 5V
CN509
PS501
Q501
REG & SWITCH
SD-18 BOARD (3"LCD MODEL) (See Page 4-71)
SD-19 BOARD (4"LCD MODEL) (See Page 4-81)

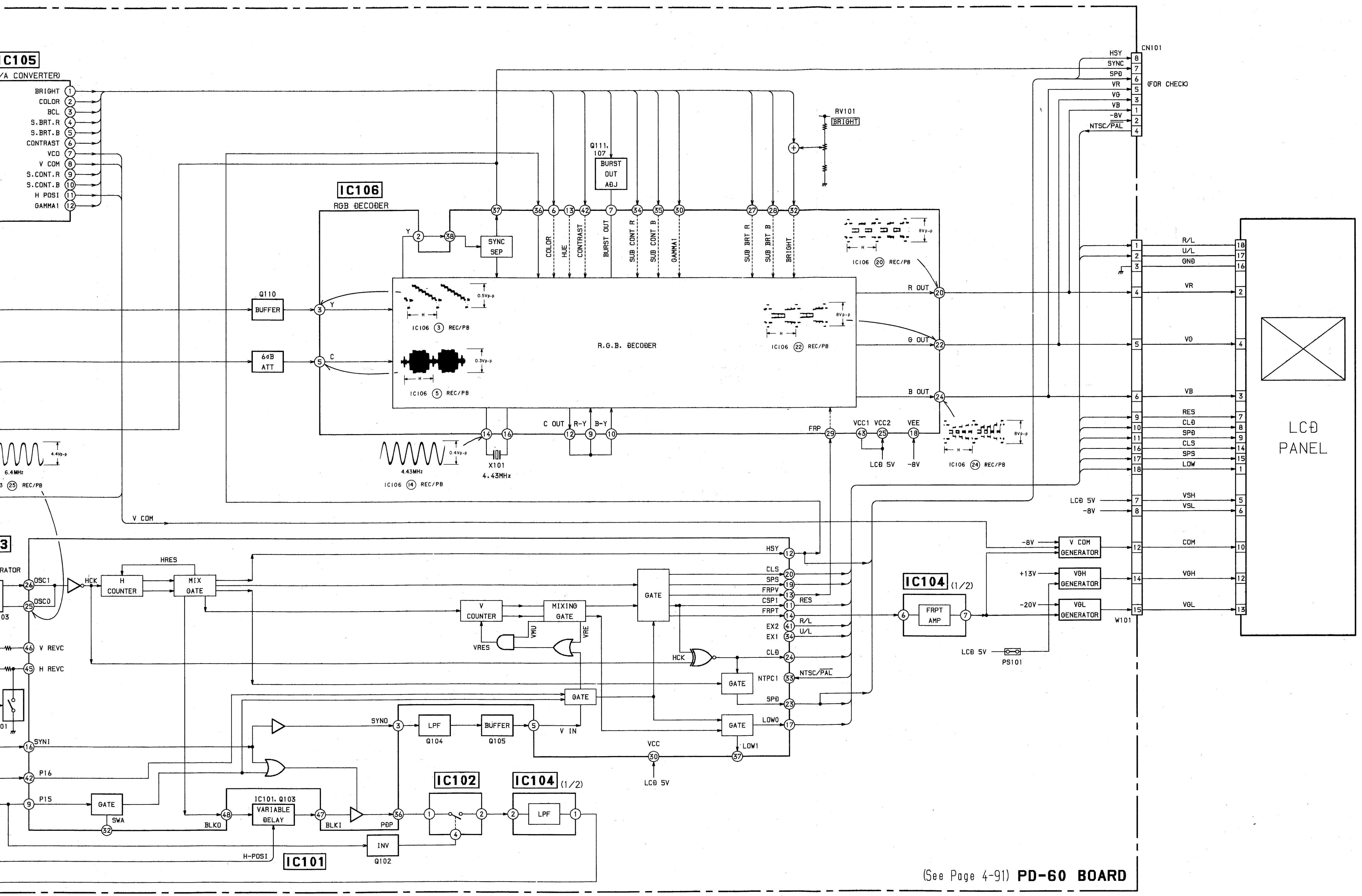
3-8. EVF BLOCK DIAGRAM


VF-82 BOARD (3"LCD MODEL) (See Page 4-65)
VF-85 BOARD (4"LCD MODEL) (See Page 4-69)
Q903
VIDEO AMP
Q904
VIDEO DRIVE
2.5Vp-p
H
IC901 ⑬ REC
EVF 5V
D901 (TALLY)
1Vp-p
IC901 ⑪ REC
LCD (SD-18:3"LCD MODEL) (SD-19:4"LCD MODEL)
TALLY
EVF OUT
CN901
IC906
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP/BLKG MIX
V SYNC SEP
V OSC
V OUT
VCC
EVF 5V
Q902
H OUT
C909
H SIZE
T901
FBT
EVF 5V
D903
DUMPER
RV904
BRIGHT
W901
G1
H
HV
G2
V901
PICTURE TUBE
CN902
DH2
DH1
DV2
DV1
DEFLECTION YOKE
L903
HLC
RV903
V SIZE
09

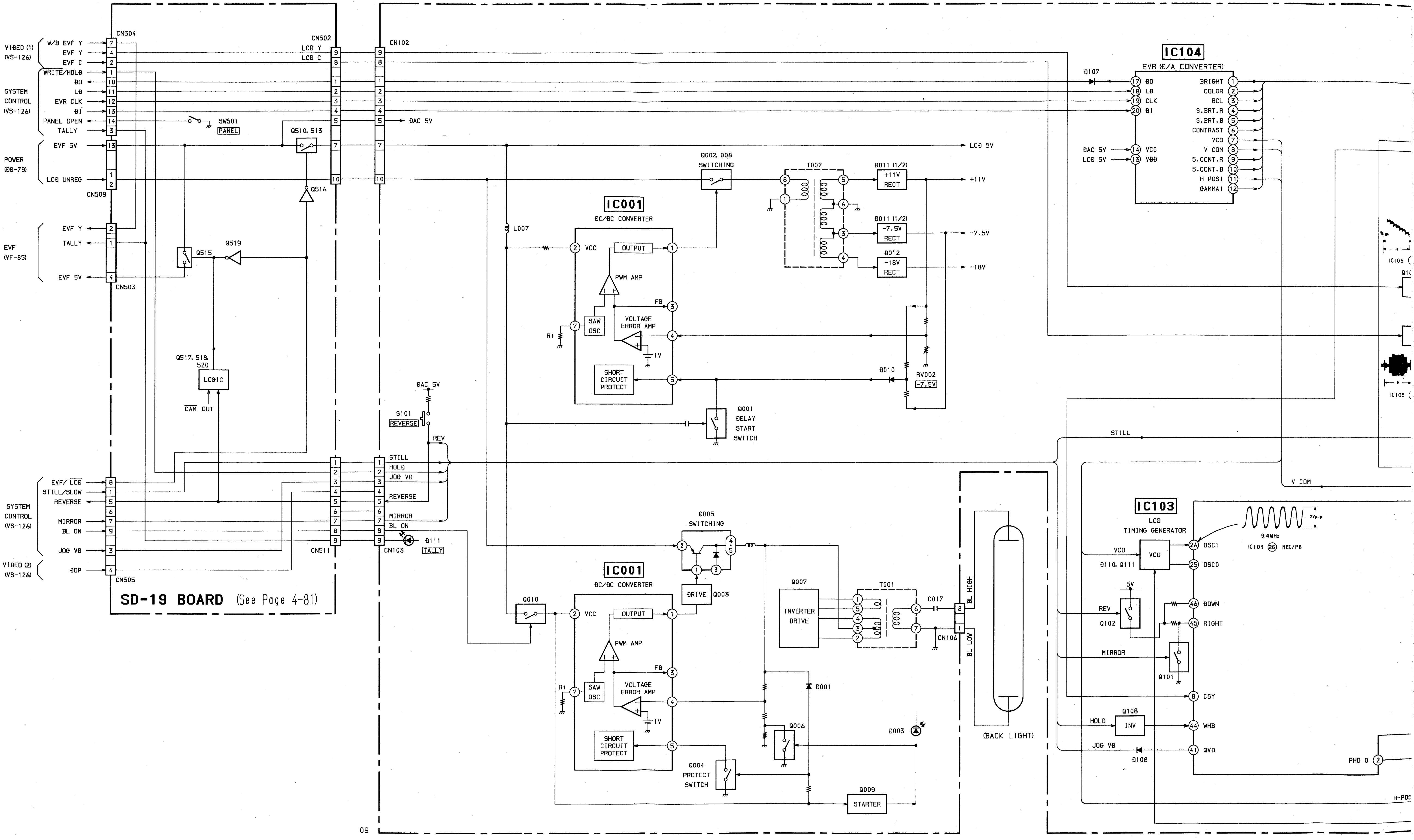
3"LCD MODEL:CCD-TRV30E/TRV40E/TRV60E, FV 836
4"LCD MODEL:CCD-TRV50E/TRV70E, FV 876

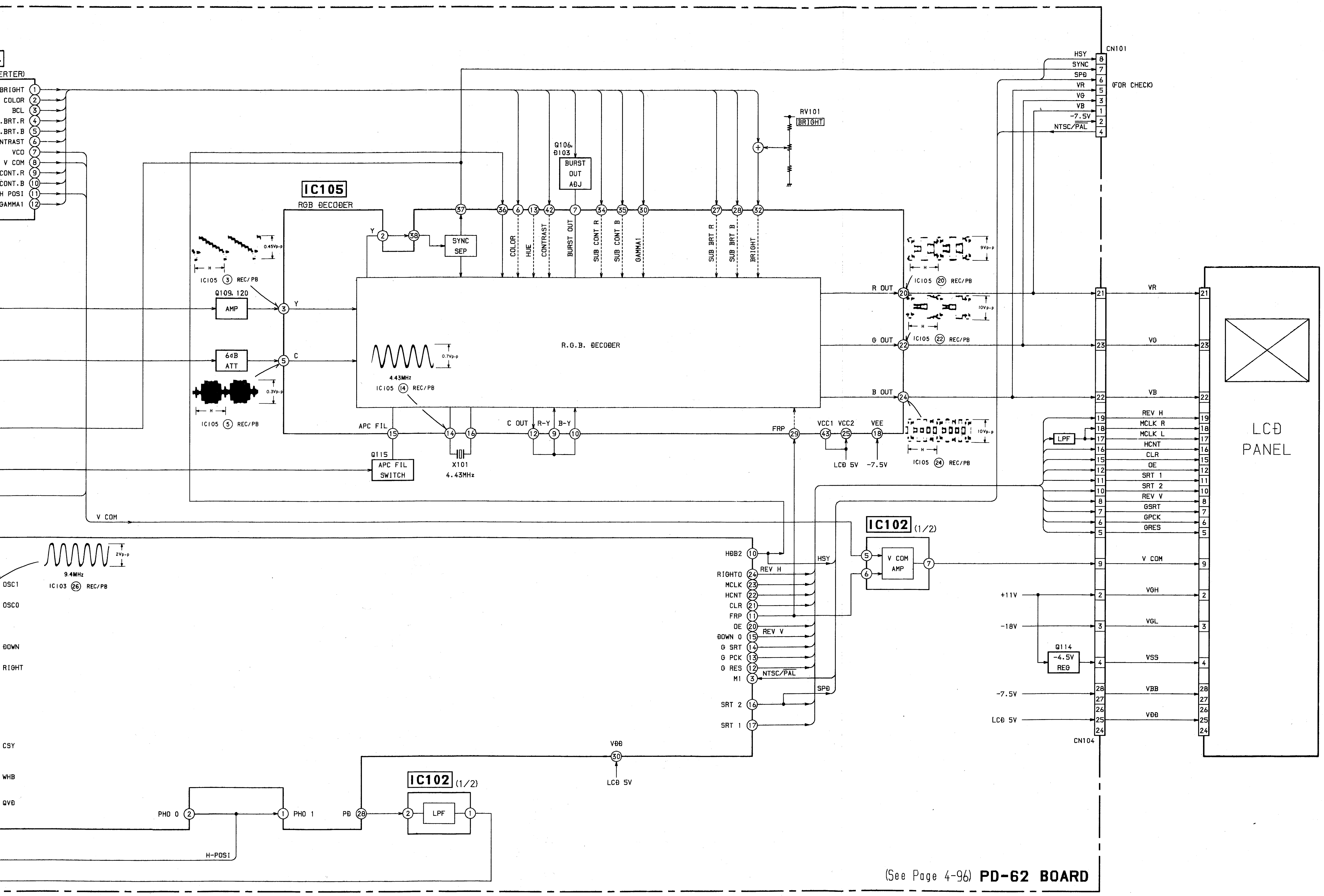
3-9. 3" LCD BLOCK DIAGRAM


VIDEO (1) (VS-126)
W/B EVF Y
EVF Y
EVF C
WRITE/HOLD
DO
SYSTEM CONTROL (VS-126)
LD
EVR CLK
DI
PANEL OPEN
TALLY
POWER (DD-79)
EVF 5V
LCD UNREG
CN504
CN509
CN502
LCD Y
LCD C
CN102
DAC 5V
Q510, 513
Q516
LCD 5V
EVF (VF-82)
EVF Y
TALLY
EVF 5V
CN503
Q515
Q519
SW501
PANEL
Q517, 518, 520, 521
LOGIC
CAM OUT
IC001
DC/DC CONVERTER
VCC
OUTPUT
PWM AMP
FB
SAW OSC
VOLTAGE ERROR AMP
1V
SHORT CIRCUIT PROTECT
Rt
L001
Q004, 005 SWITCHING
T001
D003 (1/2)
+13V RECT
+13V
D003 (1/2)
-8V RECT
-8V
D004
-20V RECT
-20V
D002
Q003 DELAY START SWITCH
IC105
EVR (D/A CONVERTER)
D106
DO
LD
CLK
DI
DAC 5V
LCD 5V
VCC
VDD
BRIGHT
COLOR
BCL
S.BRT.R
S.BRT.B
CONTRAST
VCO
V COM
S.CONT.R
S.CONT.B
H POSI
GAMMA1
4.4Vp-p
6.4MHz
IC103 ㉕ REC/PB
SYSTEM CONTROL (VS-126)
EVF/LCD
STILL/SLOW
REVERSE
MIRROR
BL ON
JOG VD
VIDEO (2) (VS-126)
DOP
CN505
CN511
CN103
S101
REVERSE
DAC 5V
REV
HOLD
JOG VD
REVERSE
MIRROR
BL ON
D101
TALLY
SD-18 BOARD (See Page 4-71)
Q008 SWITCHING
Q006
DRIVE
IC002
DC/DC CONVERTER
Q001
VCC
OUTPUT
PWM AMP
FB
SAW OSC
VOLTAGE ERROR AMP
1V
SHORT CIRCUIT PROTECT
Rt
D006
Q007 PROTECT SWITCH
Q010
INVERTER DRIVE
T002
C038
BL HIGH
BL LOW
D008
Q012
STARTER
(BACK LIGHT)
09
V COM
IC103
LCD TIMING GENERATOR
VCO
VCO
OSC1
OSC0
D103
HCK
H COUNTER
HRES
MIX GATE
5V
REV
Q114
V REVC
H REVC
MIRROR
Q101
SYNI
Q106
HOLD
INV
P16
JOG VD
D104
P15
GATE
SWA
BLKO


C105
/A CONVERTER)
BRIGHT 1
COLOR 2
BCL 3
S.BRT.R 4
S.BRT.B 5
CONTRAST 6
VCO 7
V COM 8
S.CONT.R 9
S.CONT.B 10
H POSI 11
GAMMA1 12
IC106
RGB DECODER
Q111, 107
BURST OUT ADJ
SYNC SEP
COLOR
HUE
CONTRAST
BURST OUT
SUB CONT R
SUB CONT B
GAMMA1
SUB BRT R
SUB BRT B
BRIGHT
RV101
BRIGHT
Q110
BUFFER
6dB ATT
Y
C
IC106 ③ REC/PB
IC106 ⑤ REC/PB
0.5Vp-p
0.3Vp-p
R.G.B. DECODER
IC106 ㉒ REC/PB
IC106 ⑳ REC/PB
IC106 ㉔ REC/PB
8Vp-p
R OUT
G OUT
B OUT
C OUT
R-Y
B-Y
FRP
VCC1
VCC2
VEE
LCD 5V
-8V
X101
4.43MHz
IC106 ⑭ REC/PB
0.4Vp-p
4.4Vp-p
6.4MHz
3 ㉕ REC/PB
V COM
CN101
HSY
SYNC
SPD
VR
VG
VB
-8V
NTSC/PAL
(FOR CHECK)
R/L
U/L
GND
VR
VG
VB
RES
CLD
SPD
CLS
SPS
LOW
VSH
VSL
COM
VGH
VGL
LCD 5V
-8V
+13V
-20V
V COM GENERATOR
VGH GENERATOR
VGL GENERATOR
W101
LCD PANEL
LCD 5V
PS101
IC104 (1/2)
FRPT AMP
RATOR
OSC1
OSCO
03
V REVC
H REVC
01
SYNI
P16
P15
HCK
H COUNTER
HRES
MIX GATE
V COUNTER
MIXING GATE
VMU
VRE
VRES
GATE
HSY
CLS
SPS
FRPV
CSP1
FRPT
EX2
EX1
RES
R/L
U/L
CLD
HCK
NTPC1
NTSC/PAL
SPD
LOWO
LOW1
VCC
LCD 5V
SYNO
LPF
Q104
BUFFER
Q105
V IN
IC102
IC104 (1/2)
LPF
GATE
SWA
BLKO
IC101, Q103
VARIABLE DELAY
BLKI
PDP
INV
Q102
H-POSI
IC101
(See Page 4-91) PD-60 BOARD

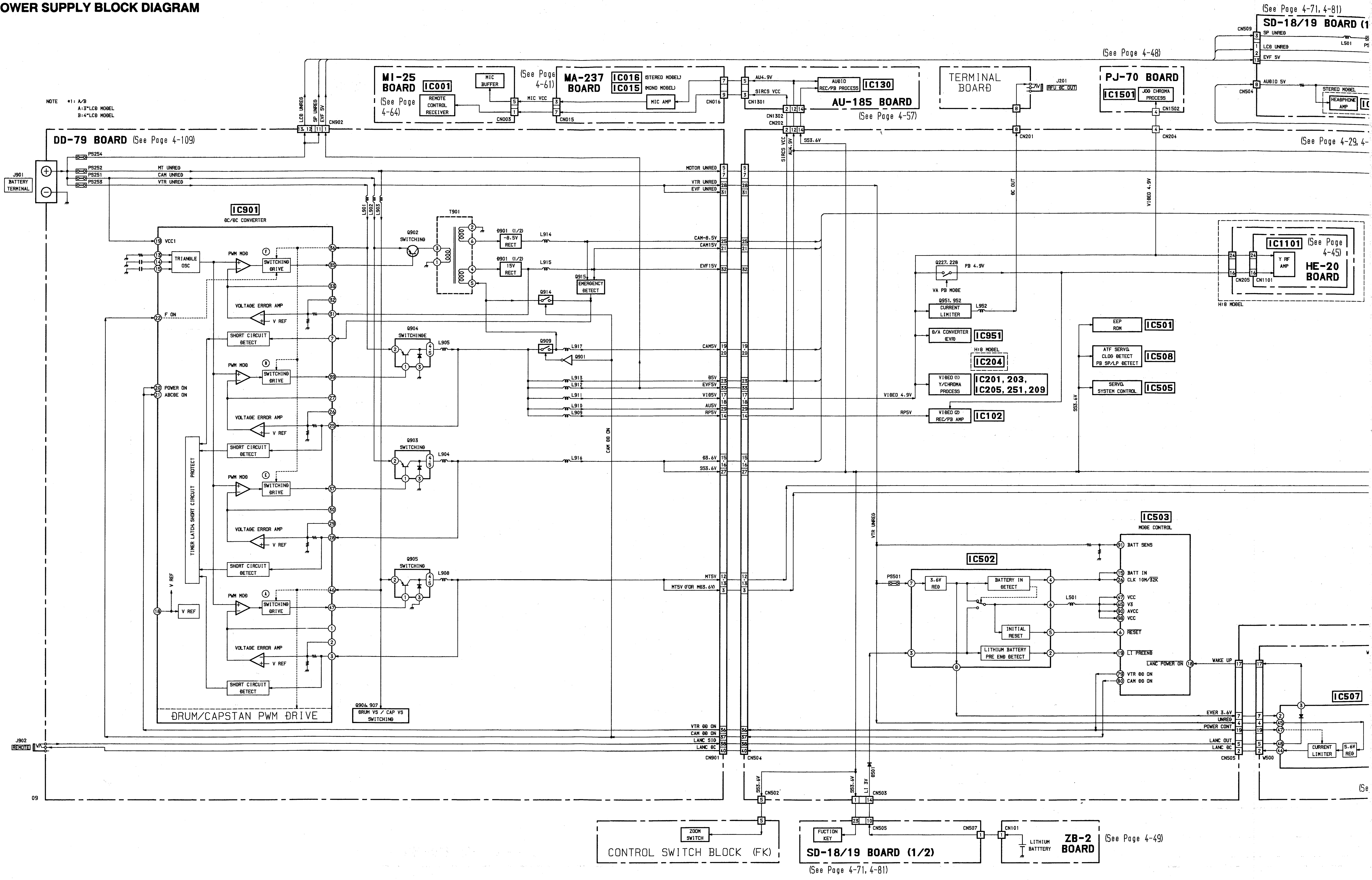
3-10. 4" LCD BLOCK DIAGRAM

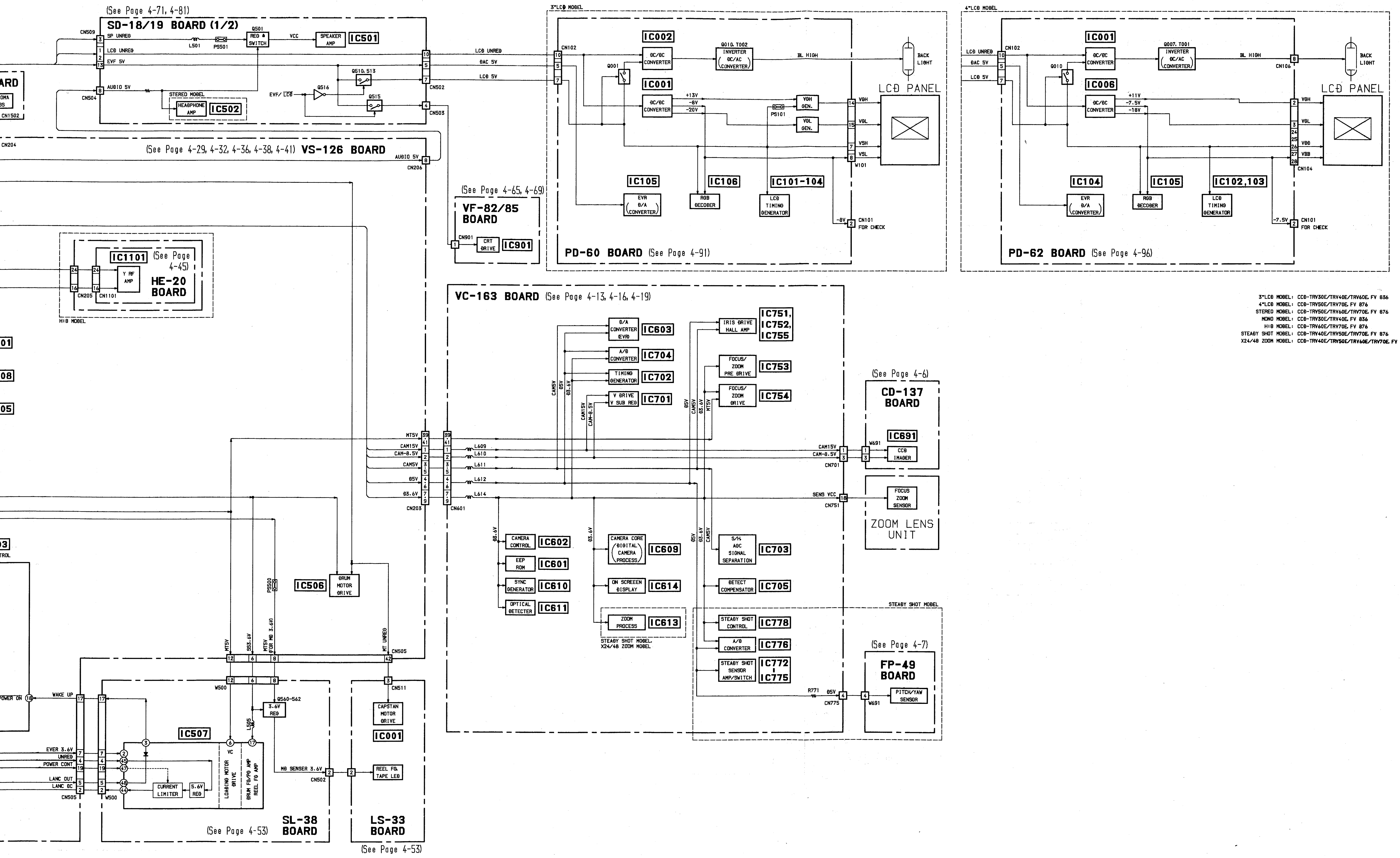

VIDEO (1)
(VS-126)
W/B EVF Y
EVF Y
EVF C
WRITE/HOLD
DO
SYSTEM
CONTROL
(VS-126)
LD
EVR CLK
DI
PANEL OPEN
TALLY
POWER
(DD-79)
EVF 5V
LCD UNREG
CN504
CN509
EVF
(VF-85)
EVF Y
TALLY
EVF 5V
CN503
SW501
PANEL
Q510, 513
Q516
Q515
Q519
Q517, 518, 520
LOGIC
CAM OUT
CN502
LCD Y
LCD C
SYSTEM
CONTROL
(VS-126)
EVF/LCD
STILL/SLOW
REVERSE
MIRROR
BL ON
JOG VD
VIDEO (2)
(VS-126)
DDP
CN505
CN511
SD-19 BOARD (See Page 4-81)
CN102
DAC 5V
DAC 5V
S101
REVERSE
REV
STILL
HOLD
JOG VD
REVERSE
MIRROR
BL ON
D111
TALLY
CN103
09
LCD 5V
+11V
-7.5V
-18V
Q002, 008
SWITCHING
T002
D011 (1/2)
+11V
RECT
D011 (1/2)
-7.5V
RECT
D012
-18V
RECT
IC001
DC/DC CONVERTER
L007
VCC
OUTPUT
PWM AMP
FB
SAW
OSC
VOLTAGE
ERROR AMP
Rt
1V
SHORT
CIRCUIT
PROTECT
D010
RV002
-7.5V
Q001
DELAY
START
SWITCH
Q005
SWITCHING
DRIVE
Q003
Q010
IC001
DC/DC CONVERTER
VCC
OUTPUT
PWM AMP
FB
SAW
OSC
VOLTAGE
ERROR AMP
Rt
1V
SHORT
CIRCUIT
PROTECT
Q004
PROTECT
SWITCH
Q007
INVERTER
DRIVE
T001
C017
D001
Q006
D003
Q009
STARTER
CN106
BL HIGH
BL LOW
(BACK LIGHT)
IC104
EVR (D/A CONVERTER)
D107
DO
LD
CLK
DI
DAC 5V
LCD 5V
VCC
VDD
BRIGHT
COLOR
BCL
S.BRT.R
S.BRT.B
CONTRAST
VCO
V COM
S.CONT.R
S.CONT.B
H POSI
GAMMA1
STILL
V COM
IC103
LCD
TIMING GENERATOR
2Vp-p
9.4MHz
IC103 ㉖ REC/PB
VCO
D110, Q111
VCO
OSC1
OSCO
5V
REV
Q102
DOWN
RIGHT
MIRROR
Q101
CSY
HOLD
Q108
INV
WHB
JOG VD
D108
QVD
PHO 0
H-POS
IC105
Q1
IC105


ERTER)
BRIGHT ①
COLOR ②
BCL ③
.BRT.R ④
.BRT.B ⑤
NTRAST ⑥
VCO ⑦
V COM ⑧
CONT.R ⑨
CONT.B ⑩
H POSI ⑪
GAMMA1 ⑫
IC105
RGB DECODER
Q106,
Q103
BURST OUT ADJ
RV101
BRIGHT
SYNC SEP
COLOR
HUE
CONTRAST
BURST OUT
SUB CONT R
SUB CONT B
GAMMA1
SUB BRT R
SUB BRT B
BRIGHT
0.45Vp-p
IC105 ③ REC/PB
Q109, 120
AMP
6dB ATT
0.3Vp-p
IC105 ⑤ REC/PB
R.G.B. DECODER
0.7Vp-p
4.43MHz
IC105 ⑭ REC/PB
APC FIL
Q115
APC FIL SWITCH
X101
4.43MHz
C OUT
R-Y
B-Y
FRP
VCC1 VCC2
VEE
LCD 5V
-7.5V
R OUT
G OUT
B OUT
9Vp-p
IC105 ⑳ REC/PB
10Vp-p
IC105 ㉒ REC/PB
10Vp-p
IC105 ㉔ REC/PB
CN101
HSY
SYNC
SPD
VR
VG
VB
-7.5V
NTSC/PAL
(FOR CHECK)
V COM
2Vp-p
9.4MHz
IC103 ㉖ REC/PB
OSC1
OSCO
DOWN
RIGHT
CSY
WHB
QVD
HDB2
RIGHTO
MCLK
HCNT
CLR
FRP
OE
DOWN O
G SRT
G PCK
G RES
M1
SRT 2
SRT 1
REV H
REV V
HSY
NTSC/PAL
SPD
IC102 (1/2)
V COM AMP
VDD
LCD 5V
PHO 0
PHO 1
PD
IC102 (1/2)
LPF
H-POSI
VR
VG
VB
REV H
MCLK R
MCLK L
HCNT
CLR
OE
SRT 1
SRT 2
REV V
GSRT
GPCK
GRES
V COM
VGH
VGL
VSS
VBB
VDD
+11V
-18V
Q114
-4.5V REG
-7.5V
LCD 5V
CN104
LCD PANEL

(See Page 4-96) **PD-62 BOARD**

3-11. POWER SUPPLY BLOCK DIAGRAM


NOTE *1: A/B
A:3"LCD MODEL
B:4"LCD MODEL
DD-79 BOARD (See Page 4-109)
J901 BATTERY TERMINAL
PS254
PS252
PS251
PS253
MT UNREG
CAM UNREG
VTR UNREG
IC901
DC/DC CONVERTER
VCC1
TRIANGLE OSC
PWM MOD
SWITCHING DRIVE
VOLTAGE ERROR AMP
V REF
SHORT CIRCUIT DETECT
F ON
POWER ON
ABCDE ON
TIMER LATCH SHORT CIRCUIT PROTECT
DRUM/CAPSTAN PWM DRIVE
T901
Q902 SWITCHING
D901 (1/2) -8.5V RECT
D901 (1/2) 15V RECT
L914
L915
D915 EMERGENCY DETECT
D914
Q904 SWITCHING
L905
Q909
L917
D901
Q903 SWITCHING
L904
L916
Q905 SWITCHING
L908
D906, 907 DRUM VS / CAP VS SWITCHING
L901
L902
L903
L913
L912
L911
L910
L909
CAM DD ON
MOTOR UNREG
VTR UNREG
EVF UNREG
CAM-8.5V
CAM15V
EVF15V
CAM5V
D5V
EVF5V
VIDEO5V
AU5V
RP5V
D3.6V
SS3.6V
MT5V
MT5V (FOR MD3.6V)
VTR DD ON
CAM DD ON
LANC SIO
LANC DC
CN901
CN902
LCD UNREG
SP UNREG
EVF 5V
J902 REMOTE
MI-25 BOARD
IC001
REMOTE CONTROL RECEIVER
MIC BUFFER
CN003
(See Page 4-64)
(See Page 4-61)
MA-237 BOARD
IC016 (STEREO MODEL)
IC015 (MONO MODEL)
MIC VCC
MIC AMP
CN015
CN016
AU4.9V
SIRCS VCC
AUDIO REC/PB PROCESS
IC130
AU-185 BOARD
(See Page 4-57)
CN1301
CN1302
CN202
SS3.6V
TERMINAL BOARD
J201 DC OUT
CN201
(See Page 4-48)
PJ-70 BOARD
IC1501
JOG CHROMA PROCESS
CN1502
CN204
VIDEO 4.9V
(See Page 4-71, 4-81)
SD-18/19 BOARD
CN509
SP UNREG
LCD UNREG
EVF 5V
LS01
CN504
AUDIO 5V
STEREO MODEL
HEADPHONE AMP
(See Page 4-29, 4-
IC1101
(See Page 4-45)
Y RF AMP
HE-20 BOARD
CN205
CN1101
HI8 MODEL
Q227, 228
PB 4.9V
VA PB MODE
Q951, 952 CURRENT LIMITER
L952
D/A CONVERTER (EVR)
IC951
HI8 MODEL
IC204
VIDEO (1) Y/CHROMA PROCESS
IC201, 203, IC205, 251, 209
VIDEO 4.9V
RP5V
VIDEO (2) REC/PB AMP
IC102
EEP ROM
IC501
ATF SERVO, CLOG DETECT, PB SP/LP DETECT
IC508
SERVO, SYSTEM CONTROL
IC505
SS3.6V
VTR UNREG
IC503
MODE CONTROL
BATT SENS
BATT IN
CLK 10M/32K
VCC
V3
AVCC
VCC
RESET
LI PREEND
LANC POWER ON
VTR DD ON
CAM DD ON
IC502
PS501
3.6V REG
BATTERY IN DETECT
INITIAL RESET
LITHIUM BATTERY PRE END DETECT
L501
WAKE UP
EVER 3.6V
UNREG
POWER CONT
LANC OUT
LANC DC
CN505
W500
IC507
CURRENT LIMITER
5.6V REG
CN504
CN502
SS3.6V
CN503
SS3.6V
LI 3V
D501
CONTROL SWITCH BLOCK (FK)
ZOOM SWITCH
SD-18/19 BOARD (1/2)
FUCTION KEY
CN505
CN507
(See Page 4-71, 4-81)
CN101
LITHIUM BATTERY
ZB-2 BOARD
(See Page 4-49)
09

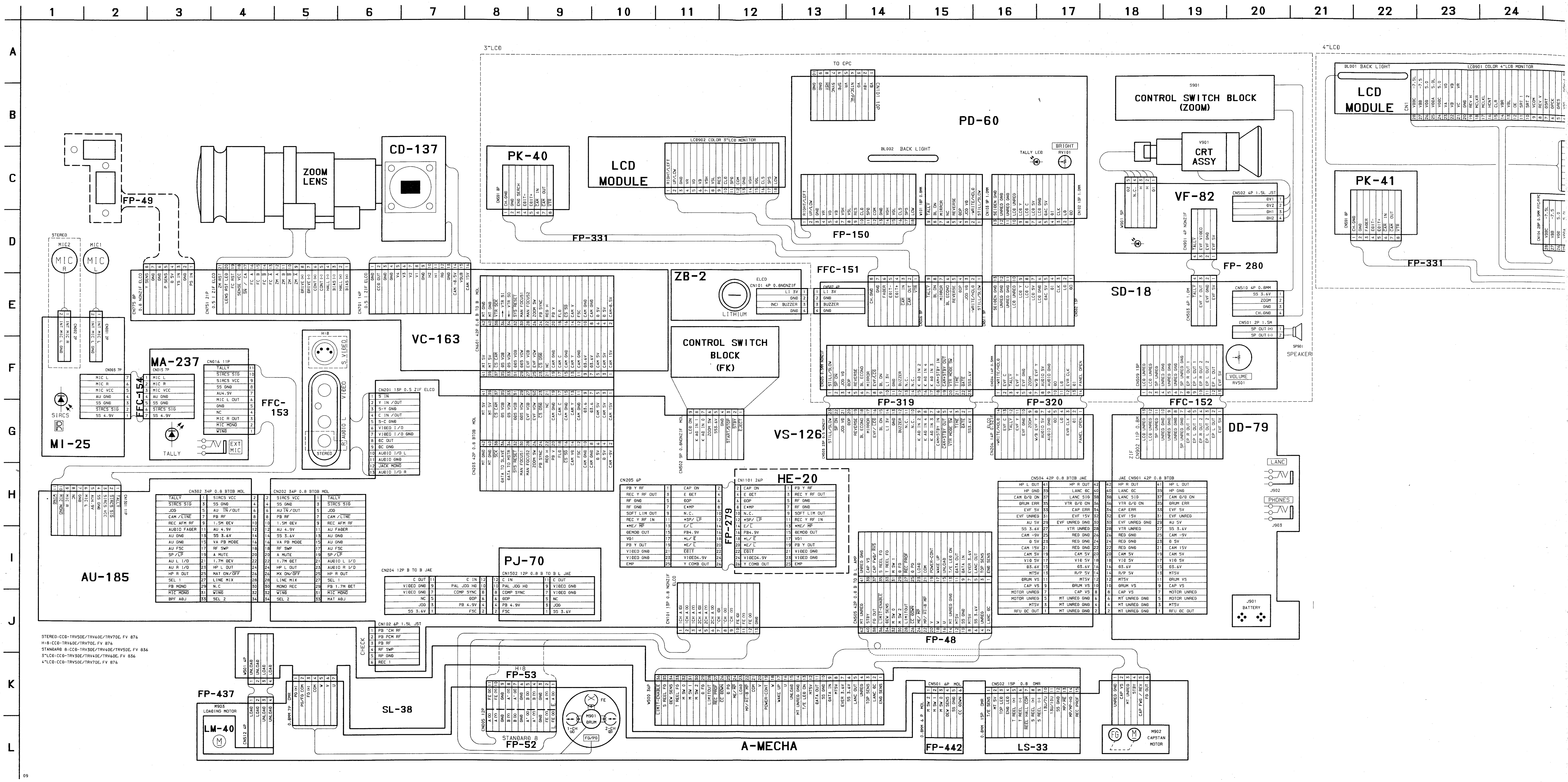

(See Page 4-71, 4-81)
SD-18/19 BOARD (1/2)
CN509
SP UNREG
LCD UNREG
EVF 5V
L501
PS501
Q501
REG & SWITCH
VCC
SPEAKER AMP
IC501
AUDIO 5V
CN504
STEREO MODEL
HEADPHONE AMP
IC502
EVF/ LCD
Q516
Q510, 513
Q515
CN502
CN503
ARD
CN1502
CN204
(See Page 4-29, 4-32, 4-36, 4-38, 4-41) VS-126 BOARD
AUDIO 5V
CN206
LCD UNREG
DAC 5V
LCD 5V
3"LCD MODEL
CN102
IC002
DC/DC CONVERTER
Q010, T002
INVERTER (DC/AC CONVERTER)
BL HIGH
BACK LIGHT
Q001
IC001
DC/DC CONVERTER
+13V
-8V
-20V
PS101
VGH GEN.
VGL GEN.
LCD PANEL
VGH
VGL
VSH
VSL
W101
IC105
EVR D/A CONVERTER
IC106
RGB DECODER
IC101-104
LCD TIMING GENERATOR
-8V
CN101 FOR CHECK
PD-60 BOARD (See Page 4-91)
4"LCD MODEL
LCD UNREG
DAC 5V
LCD 5V
CN102
IC001
DC/DC CONVERTER
Q007, T001
INVERTER (DC/AC CONVERTER)
BL HIGH
CN106
BACK LIGHT
Q010
IC006
DC/DC CONVERTER
+11V
-7.5V
-18V
LCD PANEL
VGH
VGL
VDD
VBB
CN104
IC104
EVR D/A CONVERTER
IC105
RGB DECODER
IC102,103
LCD TIMING GENERATOR
-7.5V
CN101 FOR CHECK
PD-62 BOARD (See Page 4-96)
(See Page 4-65, 4-69)
VF-82/85 BOARD
CN901
CRT DRIVE
IC901
IC1101
(See Page 4-45)
Y RF AMP
HE-20 BOARD
CN205
CN1101
HI8 MODEL
VC-163 BOARD (See Page 4-13, 4-16, 4-19)
D/A CONVERTER (EVR)
IC603
A/D CONVERTER
IC704
TIMING GENERATOR
IC702
V DRIVE V SUB REG
IC701
CAM5V
D5V
D3.6V
CAM15V
CAM-8.5V
IRIS DRIVE HALL AMP
IC751, IC752, IC755
FOCUS/ ZOOM PRE DRIVE
IC753
FOCUS/ ZOOM DRIVE
IC754
MT5V
MT5V
CAM15V
CAM-8.5V
CAM5V
D5V
D3.6V
CN203
CN601
L609
L610
L611
L612
L614
CAM15V
CAM-8.5V
CN701
SENS VCC
CN751
(See Page 4-6)
CD-137 BOARD
IC691
W691
CCD IMAGER
FOCUS ZOOM SENSOR
ZOOM LENS UNIT
CAMERA CONTROL
IC602
EEP ROM
IC601
SYNC GENERATOR
IC610
OPTICAL DETECTER
IC611
CAMERA CORE (DIGITAL CAMERA PROCESS)
IC609
ON SCREEEN DISPLAY
IC614
ZOOM PROCESS
IC613
STEADY SHOT MODEL, X24/48 ZOOM MODEL
S/H, AGC SIGNAL SEPARATION
IC703
DETECT COMPENSATOR
IC705
STEADY SHOT MODEL
STEADY SHOT CONTROL
IC778
A/D CONVERTER
IC776
STEADY SHOT SENSOR AMP/SWITCH
IC772 I IC775
R771
D5V
CN775
(See Page 4-7)
FP-49 BOARD
W691
PITCH/YAW SENSOR
01
08
05
03
TROL
PS500
IC506
DRUM MOTOR DRIVE
MT5V
SS3.6V
MT5V (FOR MD 3.6V)
MT UNREG
CN505
W500
CN511
POWER ON
WAKE UP
Q560-562
3.6V REG
L505
IC507
VC
EVER 3.6V
UNREG
POWER CONT
LANC OUT
LANC DC
CN505
W500
CURRENT LIMITER
5.6V REG
LOADING MOTOR DRIVE
DRUM FG/PG AMP REEL FG AMP
MD SENSER 3.6V
CN502
CAPSTAN MOTOR DRIVE
IC001
REEL FG, TAPE LED
SL-38 BOARD
(See Page 4-53)
LS-33 BOARD
(See Page 4-53)

3"LCD MODEL: CCD-TRV30E/TRV40E/TRV60E, FV 836
4"LCD MODEL: CCD-TRV50E/TRV70E, FV 876
STEREO MODEL: CCD-TRV50E/TRV60E/TRV70E, FV 876
MONO MODEL: CCD-TRV30E/TRV40E, FV 836
HI8 MODEL: CCD-TRV60E/TRV70E, FV 876
STEADY SHOT MODEL: CCD-TRV40E/TRV50E/TRV70E, FV 876
X24/48 ZOOM MODEL: CCD-TRV40E/TRV50E/TRV60E/TRV70E, FV 876

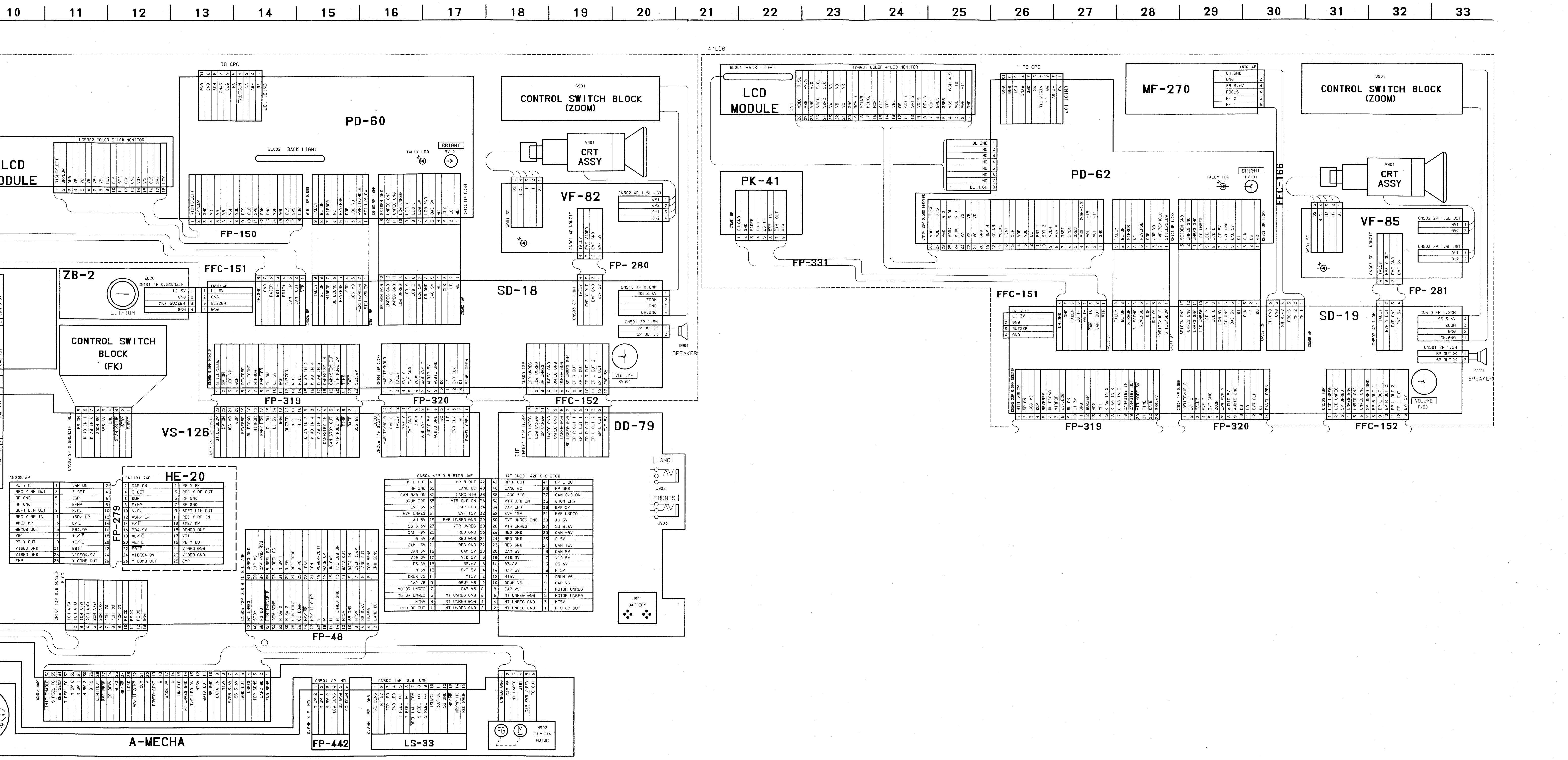
SECTION 4

PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM


3"LCD
4"LCD
CD-137
ZOOM LENS
FP-49
PK-40
LCD MODULE
PD-60
CONTROL SWITCH BLOCK (ZOOM)
CRT ASSY
VF-82
LCD MODULE
PK-41
FP-331
FP-150
FFC-151
ZB-2
LITHIUM
SD-18
FP-280
SPEAKER
VC-163
MA-237
FFC-154
FFC-153
MI-25
SIRCS
TALLY
CONTROL SWITCH BLOCK (FK)
FP-319
FP-320
FFC-152
DD-79
VS-126
HE-20
FP-279
AU-185
PJ-70
FP-48
LANC
PHONES
BATTERY
CHECK
FP-437
LM-40
SL-38
FP-53
FP-52
A-MECHA
FP-442
LS-33
CAPSTAN MOTOR

STEREO:CCD-TRV50E/TRV60E/TRV70E, FV 876
Hi8:CCD-TRV60E/TRV70E, FV 876
STANDARD 8:CCD-TRV30E/TRV40E/TRV50E, FV 836
3"LCD:CCD-TRV30E/TRV40E/TRV60E, FV 836
4"LCD:CCD-TRV50E/TRV70E, FV 876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16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
4"LCD
TO CPC
PD-60
BL002 BACK LIGHT
TALLY LED
BRIGHT
RV101
S901
CONTROL SWITCH BLOCK (ZOOM)
V901
CRT ASSY
VF-82
CN502 4P 1.5L JST
FP-280
LCD
MODULE
LC8902 COLOR 3"LCD MONITOR
FP-150
FFC-151
ZB-2
LITHIUM
CONTROL SWITCH BLOCK (FK)
SD-18
VS-126
FP-319
FP-320
FFC-152
DD-79
LANC
J902
PHONES
J903
SP901
SPEAKER
VOLUME
RV501
CN205 6P
CN1101 26P
HE-20
FP-279
FP-48
CN504 42P 0.8 BTOB JAE
JAE CN901 42P 0.8 BTOB
J901
BATTERY
A-MECHA
FP-442
LS-33
FG
M
M902
CAPSTAN
MOTOR
BL001 BACK LIGHT
LC8901 COLOR 4"LCD MONITOR
LCD
MODULE
TO CPC
MF-270
S901
CONTROL SWITCH BLOCK (ZOOM)
PK-41
PD-62
TALLY LED
BRIGHT
RV101
FFC-166
V901
CRT ASSY
VF-85
FP-331
FP-281
FFC-151
SD-19
SP901
SPEAKER
FP-319
FP-320
FFC-152
VOLUME
RV501

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.

(In addition to this , the necessary note is printed in each block.)

- **For printed wiring boards.**
- ▨ : Pattern from the side which enables seeing. (The other layers'patterns are not indicated.)
- Circled numbers refer to waveforms.
- (B) or (F), etc. of capacitors indicate the temperature characteristics.
- ○: Through hole is omitted.

* Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side)	Parts on the parts face side seen from the parts face are indicated.

- **For schematic diagrams.**
- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W unless otherwise noted. Chip resistor are 1/10W unless otherwise noted. kΩ : 1000Ω , MΩ : 1000kΩ .
- All capacitors are in μF unless otherwise noted. pF: μ μF. 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▣ : nonflammable resistor.
- ▭ : panel designation.
- △ : internal component.
- ▭ : adjustment for repeair.
- ━ : B+ Line.
- ╍ : B– Line.
- ⇨ : IN/OUT direction of (+, –) B LINE.
- Circled numbers refer to waveforms.

Note:
The components identi- fied by mark ⚠ or dotted line with mark ⚠ are critical for safty.
Replace only with part number specified.

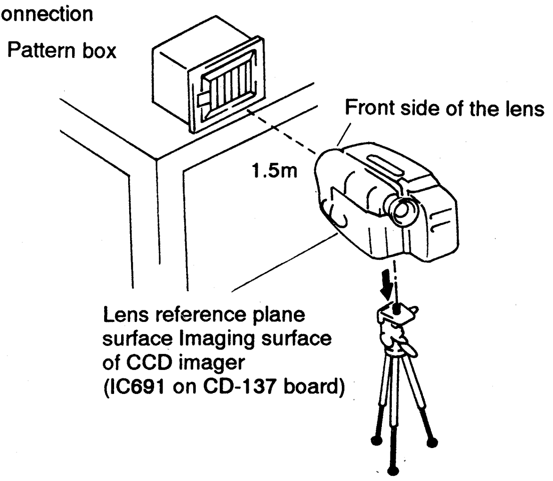
When indicating parts by reference number, please include the board name.

- **Measuring conditions voltage value and waveform.**

(CAMERA REC mode)

- The object is color bar chart of pattern box.
- Voltages are dc between ground and measurement points. Readings are taken with a digital multimeter (DC 10MΩ).
- Voltage variations may be noted due to normal production tolerances.

1. Connection


Pattern box
Front side of the lens
1.5m
Lens reference plane surface Imaging surface of CCD imager (IC691 on CD-137 board)

2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

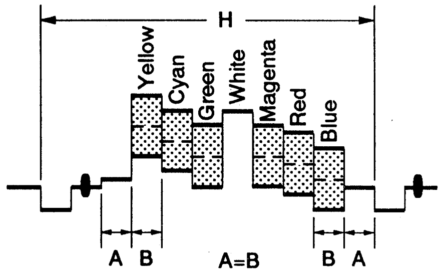


Fig. a (Video output terminal output waveform)

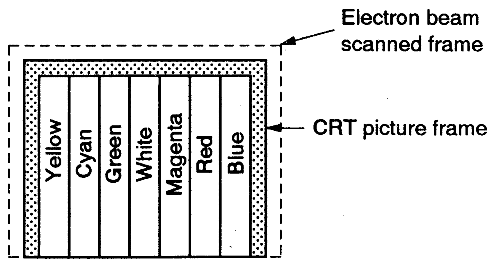

Electron beam scanned frame
CRT picture frame
Yellow
Cyan
Green
White
Magenta
Red
Blue

Fig. b (Picture on monitor TV)

(REC/PB mode)

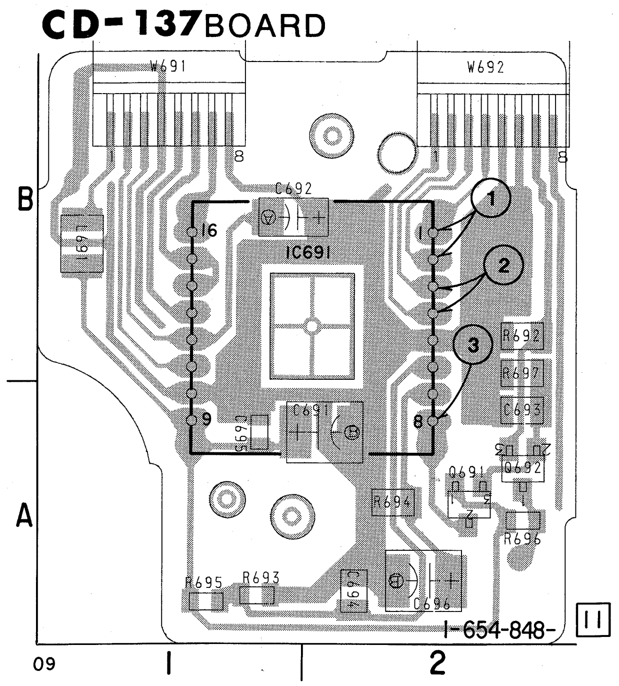
- Voltages are dc between ground and measurement points.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.

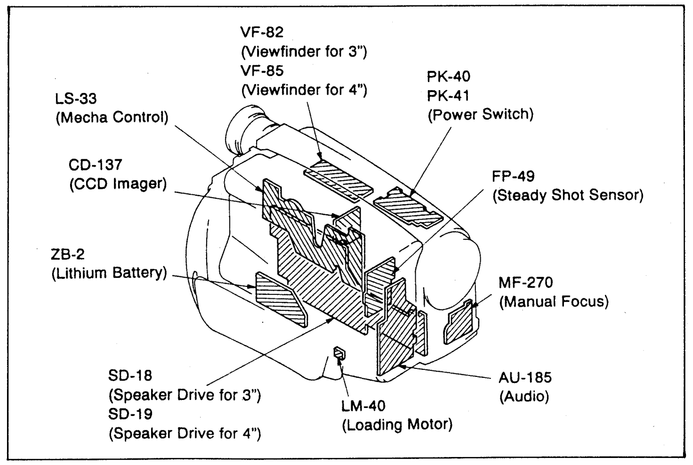
Note: Refer "3-1-3. Connecting the equipments" and "3-1-4. How to set the REC Mode" in VIDEO SECTION ADJUSTMENT. (See page 6–32)

CD-137 (CCD IMAGER) PRINTED WIRING BOARD

— Ref. No. CD-137 BOARD: 2000 series —

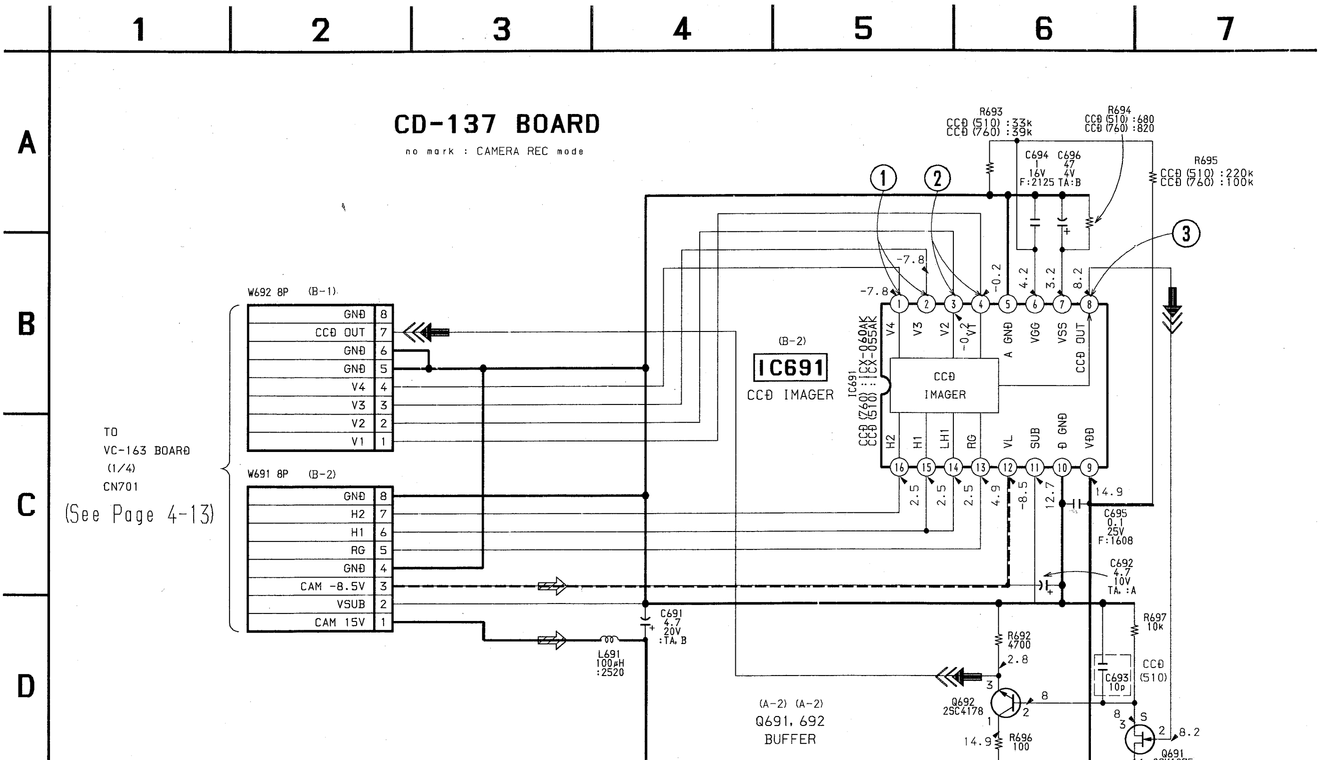
CD-137	BOARD
C691	A-2
C692	B-1
C693	A-2
C694	A-2
C695	A-1
C696	A-2
IC691	B-2
L691	B-1
Q691	A-2
Q692	A-2
R692	B-2
R693	A-1
R694	A-2
R695	A-1
R696	A-2
R697	B-2
W691	B-2
W692	B-1


CD-137BOARD
W691
W692
1
8
1
8
B
A
C692
16
IC691
L691
①
②
③
R692
R697
C693
9
8
C695
C691
Q691
Q692
R694
R696
R695
R693
C694
C696
1-654-848-
11
09
1
2


VF-82 (Viewfinder for 3")
VF-85 (Viewfinder for 4")
PK-40
PK-41 (Power Switch)
LS-33 (Mecha Control)
CD-137 (CCD Imager)
FP-49 (Steady Shot Sensor)
ZB-2 (Lithium Battery)
MF-270 (Manual Focus)
SD-18 (Speaker Drive for 3")
SD-19 (Speaker Drive for 4")
LM-40 (Loading Motor)
AU-185 (Audio)

CD-137 (CCD IMAGER) SCHEMATIC DIAGRAM

— Ref. No. CD-137 BOARD: 2000 series —


1
2
3
4
5
6
7
A
B
C
D
E
CD-137 BOARD
no mark : CAMERA REC mode
W692 8P (B-1)
GND 8
CCD OUT 7
GND 6
GND 5
V4 4
V3 3
V2 2
V1 1
TO
VC-163 BOARD
(1/4)
CN701
(See Page 4-13)
W691 8P (B-2)
GND 8
H2 7
H1 6
RG 5
GND 4
CAM -8.5V 3
VSUB 2
CAM 15V 1
R693
CCD (510) :33k
CCD (760) :39k
R694
CCD (510) :680
CCD (760) :820
C694 1 16V F:2125
C696 47 4V TA:B
R695
CCD (510) :220k
CCD (760) :100k
①
②
③
(B-2)
IC691
CCD IMAGER
IC691
CCD (760) : ICX-060AK
CCD (510) : ICX-055AK
CCD
IMAGER
V4
V3
V2
VT
A GND
VGG
VSS
CCD OUT
H2
H1
LH1
RG
VL
SUB
D GND
VDD
-7.8
-7.8
-0.2
-0.2
4.2
3.2
8.2
2.5
2.5
2.5
4.9
-8.5
12.7
14.9
C695 0.1 25V F:1608
C692 4.7 10V TA :A
C691 4.7 20V :TA, B
L691 100μH :2520
R692 4700
2.8
Q692 2SC4178
R696 100
14.9
R697 10k
C693 10p
CCD (510)
Q691 2SK1875
8.2
14.9
(A-2) (A-2)
Q691, 692
BUFFER

•SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			➡»
PB			

09

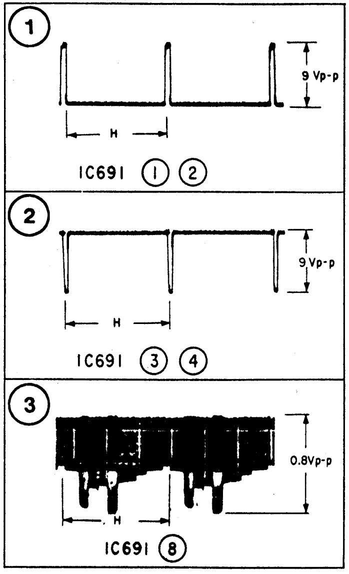
CCD (510) :CCDTRV30E, FV 836

CCD (760) :CCD-TRV40E/TRV50E/TRV60E/TRV70E, FV 876

Note on the CCD Imager replacement

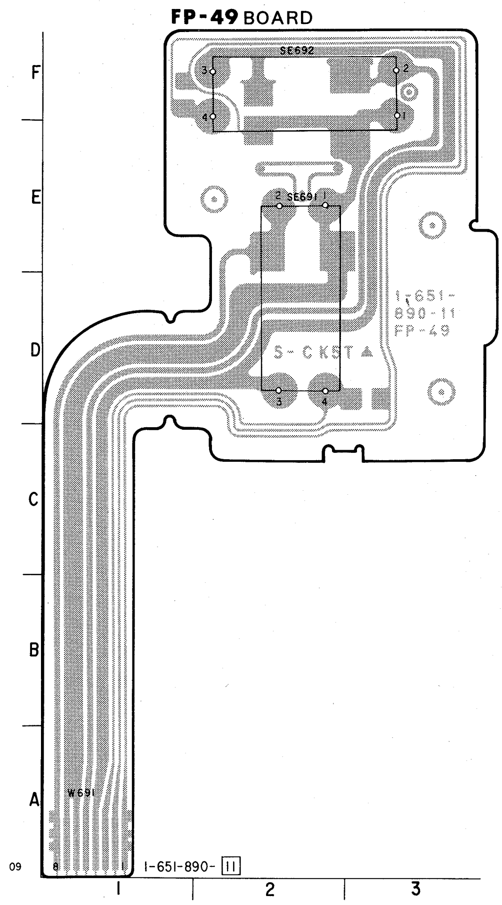
- The CCD imager is not mounted for the already mounted CD-137 board supplied as the repair parts.
  When replacing the CD-137 board, remove the CCD imager from the old board and install on the new board.
- Perform all adjustments of the camera block when the CCD imager has been replaced.
- Handle the CCD imager with attention such as MOS IC as it may be broken by static electricity in the structure.
  Also, prevent the receiving light section from dust attached and strong light.

CD-137BOARD



FP-49 (STEADY SHOT SENSOR) PRINTED WIRING BOARD

— Ref. No. FP-49 BOARD: 2000 series —

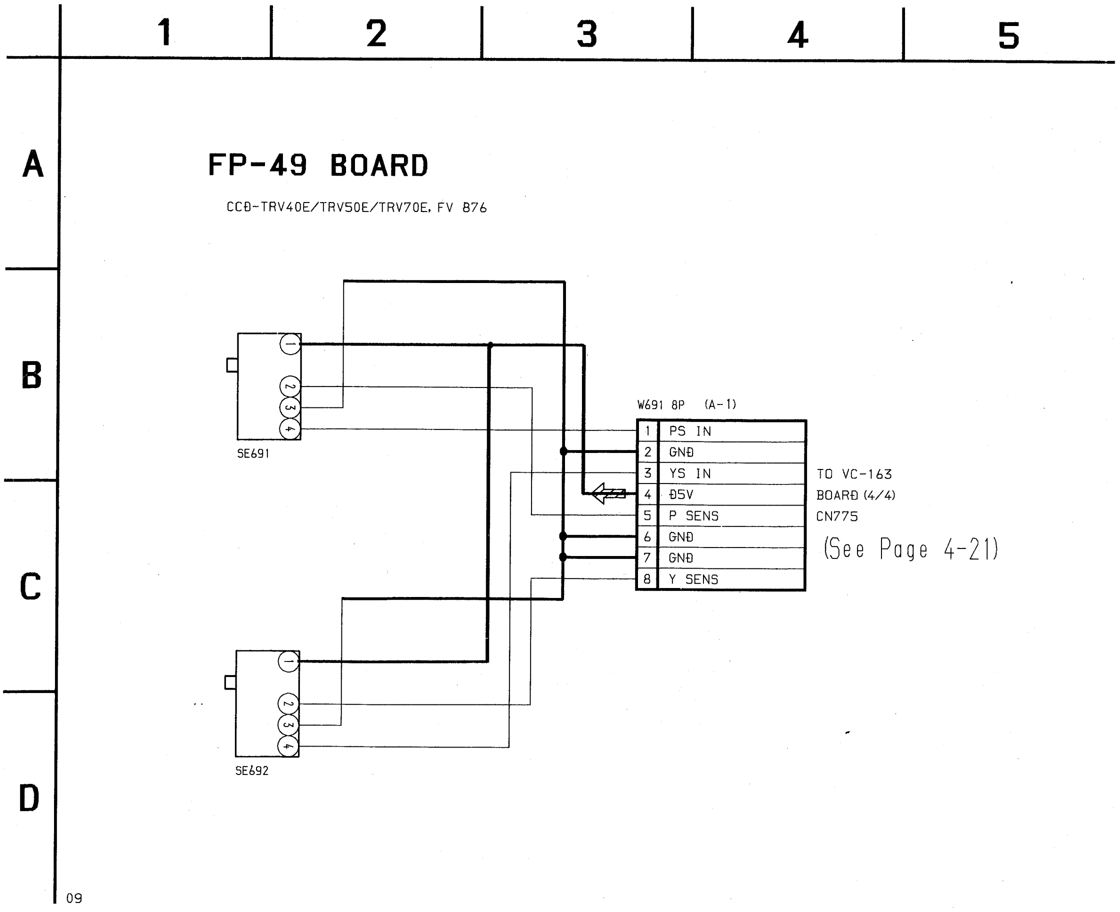

FP-49 BOARD
SE692
SE691
1-651-890-11 FP-49
S-CKST
W691
1-651-890-11
A
B
C
D
E
F
1
2
3
09

FP-49 BOARD

SE691	E-2
SE692	F-2
W691	A-1

FP-49 (STEADY SHOT SENSOR) SCHEMATIC DIAGRAM

— Ref. No. FP-49 BOARD: 2000 series —

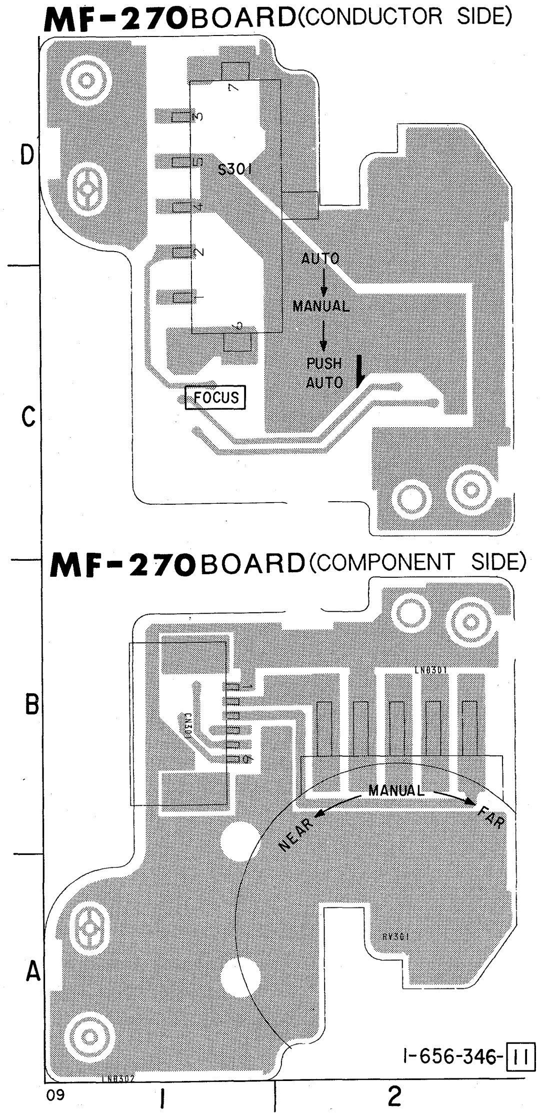

1
2
3
4
5
A
B
C
D
FP-49 BOARD
CCD-TRV40E/TRV50E/TRV70E, FV 876
SE691
SE692
W691 8P (A-1)
1 PS IN
2 GND
3 YS IN
4 D5V
5 P SENS
6 GND
7 GND
8 Y SENS
TO VC-163 BOARD (4/4) CN775
(See Page 4-21)
09

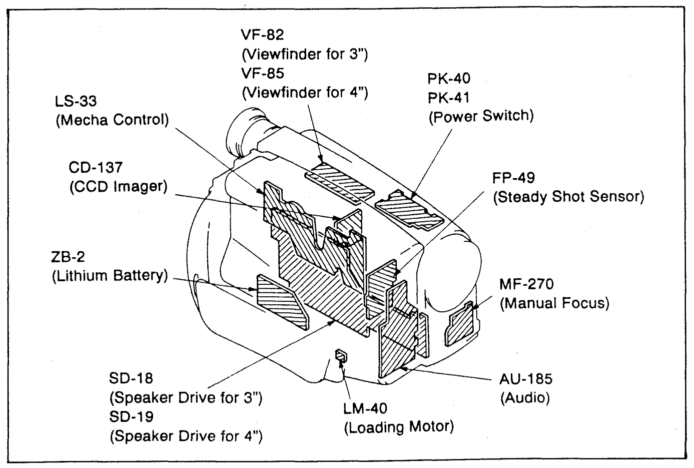
MF-270 (MANUAL FOCUS) PRINTED WIRING BOARD

— Ref. No. MF-270 BOARD: 6000 series —

MF-270 BOARD

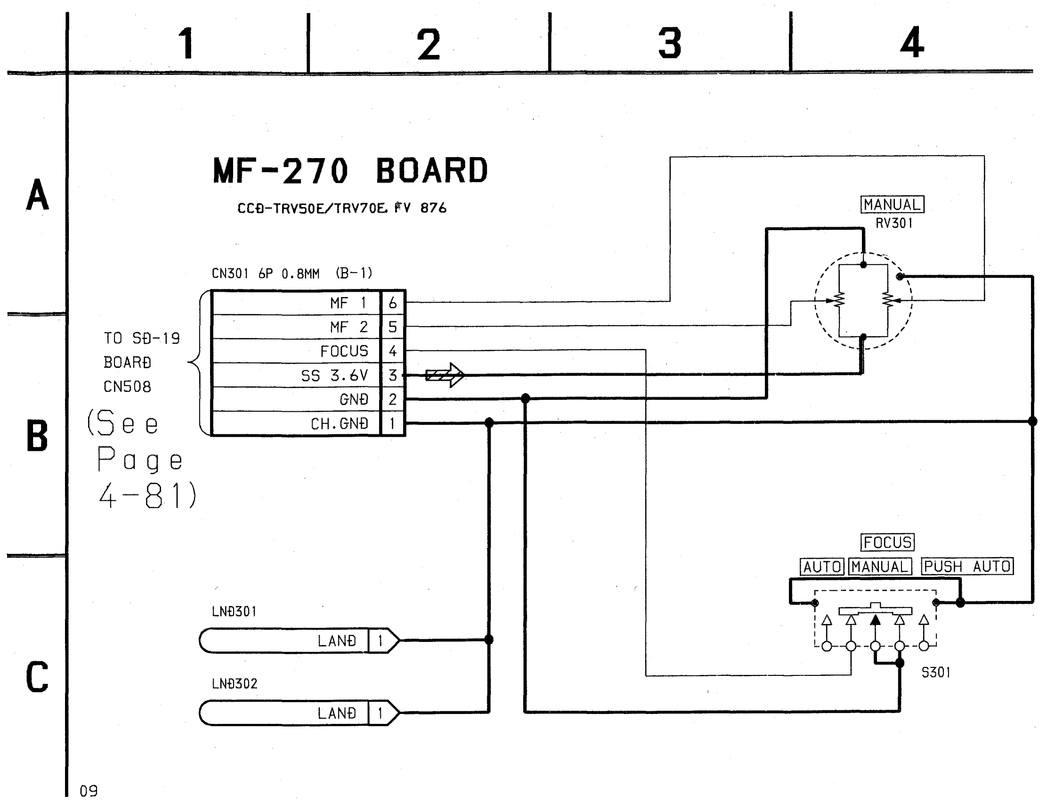
CN301	B-1
RV301	A-2
S301	D-1


MF-270BOARD(CONDUCTOR SIDE)
D
S301
AUTO
MANUAL
PUSH AUTO
FOCUS
C
MF-270BOARD(COMPONENT SIDE)
B
LND301
CN301
MANUAL
NEAR
FAR
RV301
A
1-656-346-11
LND302
09
1
2


VF-82
(Viewfinder for 3")
VF-85
(Viewfinder for 4")
PK-40
PK-41
(Power Switch)
LS-33
(Mecha Control)
CD-137
(CCD Imager)
FP-49
(Steady Shot Sensor)
ZB-2
(Lithium Battery)
MF-270
(Manual Focus)
SD-18
(Speaker Drive for 3")
SD-19
(Speaker Drive for 4")
LM-40
(Loading Motor)
AU-185
(Audio)

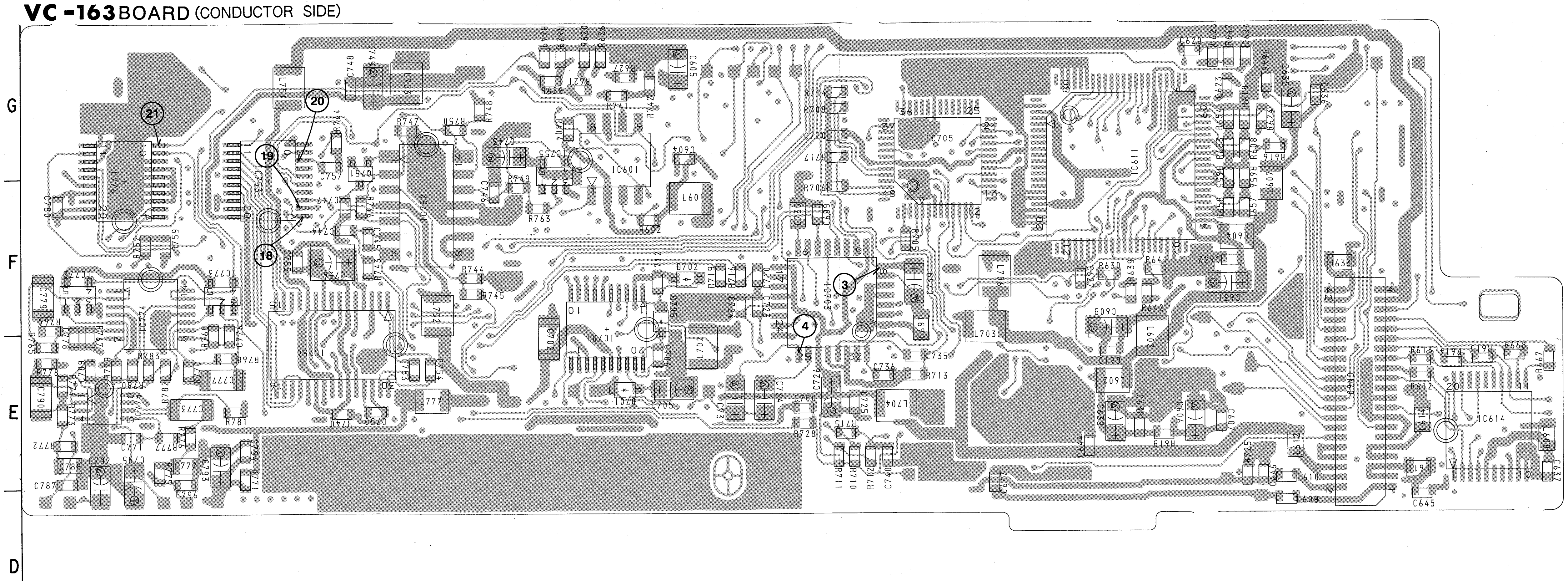
MF-270 (MANUAL FOCUS) SCHEMATIC DIAGRAM

— Ref. No. MF-270 BOARD: 6000 series —

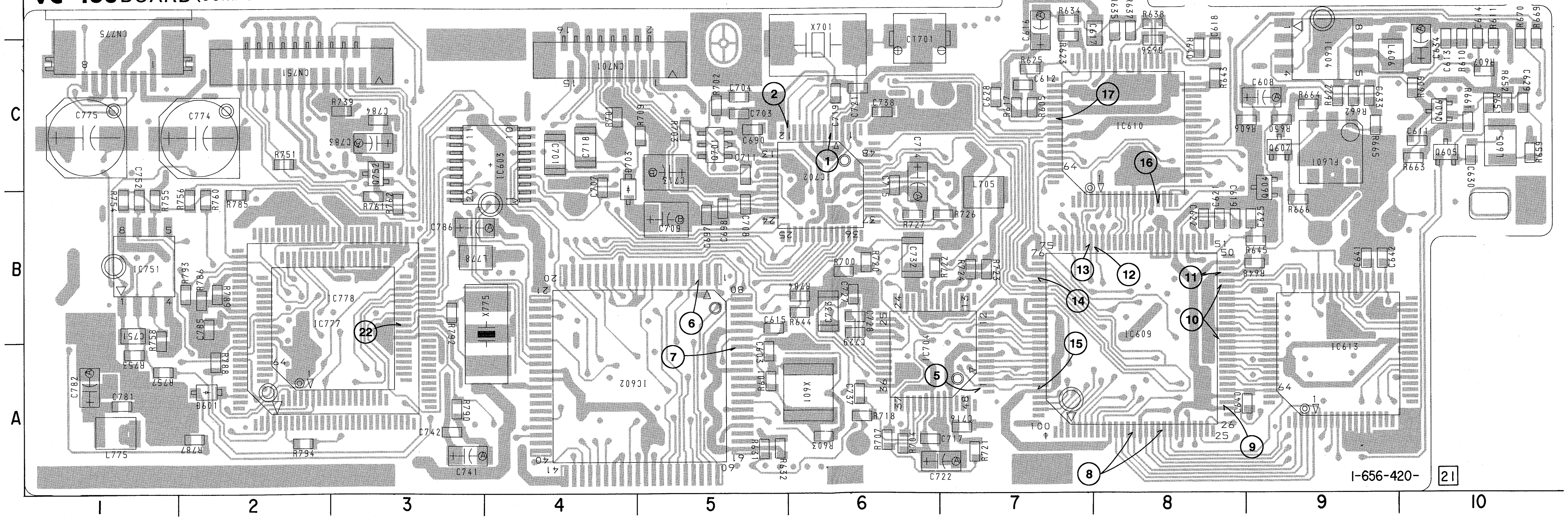

1
2
3
4
A
B
C
MF-270 BOARD
CCD-TRV50E/TRV70E FV 876
CN301 6P 0.8MM (B-1)
MF 1 6
MF 2 5
FOCUS 4
SS 3.6V 3
GND 2
CH.GND 1
TO SD-19
BOARD
CN508
(See
Page
4-81)
MANUAL
RV301
FOCUS
AUTO
MANUAL
PUSH AUTO
S301
LND301
LAND 1
LND302
LAND 1
09

VC-163 (CAMERA, LENS DRIVE, STEADY SHOT CONTROL) PRINTED WIRING BOARD

VC-163 BOARD (CONDUCTOR SIDE)


G
F
E
D
IC776
IC752
IC601
IC705
IC611
IC774
IC754
IC701
IC703
IC614
CN601
L601
L703
L704
L706
L777
①
③
④
⑱
⑲
⑳
㉑

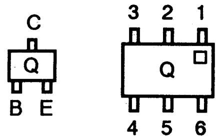
VC-163 BOARD (COMPONENT SIDE)

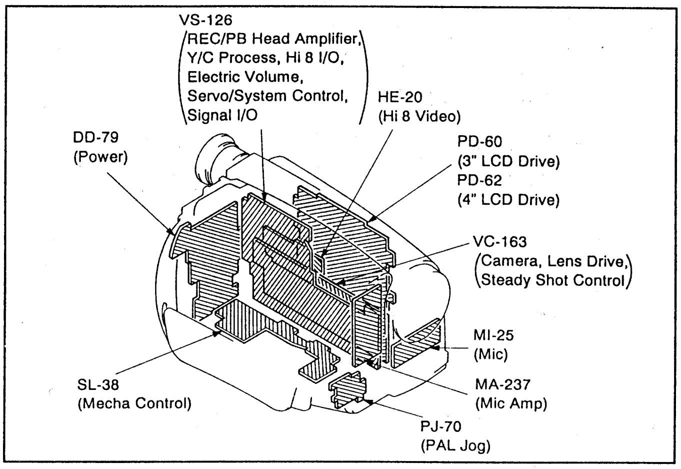

C
B
A
1
2
3
4
5
6
7
8
9
10
CN775
CN751
CN701
X701
IC1701
C775
C774
IC603
IC751
IC778
IC777
X775
IC602
IC702
IC701
X601
IC610
IC609
IC604
IC613
FL601
L705
L775
②
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
⑰
㉒
1-656-420- 21

VC-163 BOARD

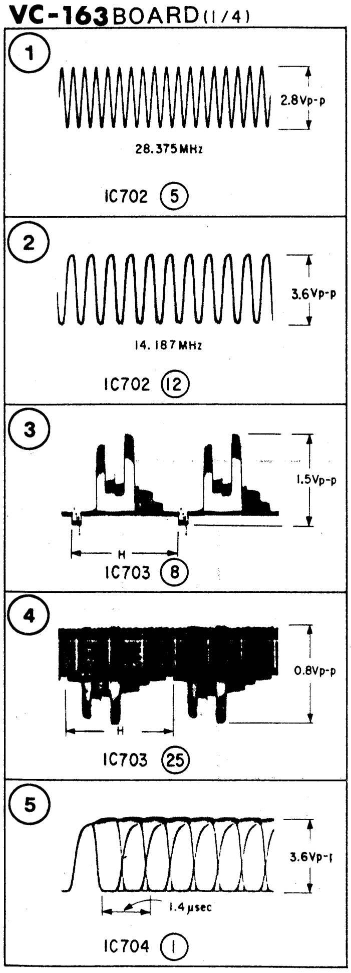
C604	G-5
C605	G-5
C606	E-8
C607	E-8
C609	F-8
C610	E-8
C612	C-7
C616	D-7
C617	D-8
C618	C-8
C619	B-8
C620	G-8
C621	B-8
C622	B-8
C623	G-8
C624	G-8
C628	C-7
C629	C-10
C630	C-10
C631	F-8
C632	F-8
C633	C-9
C634	C-10
C635	G-9
C636	G-9
C637	E-10
C638	E-8
C639	E-8
C641	B-9
C642	B-9
C644	E-7
C645	D-10
C646	E-9
C647	E-7
C691	F-6
C699	F-6
C701	C-4
C702	E-4
C703	C-5
C704	C-5
C705	E-5
C706	E-5
C708	B-5
C709	B-5
C710	F-5
C711	C-5
C712	F-5
C713	C-5
C714	C-6
C715	C-6
C716	A-7
C717	A-6
C718	C-4
C719	C-6
C720	G-6
C721	C-6
C722	A-6
C724	F-5
C725	E-6
C726	E-6
C727	B-6
C728	B-6
C729	B-6
C730	F-6
C731	E-5
C732	B-6
C733	B-6
C734	E-5
C735	E-6
C741	A-3
C742	A-3
C743	G-4
C744	F-3
C745	F-3
C746	F-4
C747	F-3
C748	G-3
C749	G-3
C750	E-3
C751	B-1
C752	B-1
C753	E-3
C754	E-3
C755	F-2
C756	F-3
C757	G-3
C771	E-1
C772	E-2
C773	E-2
C774	C-2
C775	C-1
C776	E-2
C777	E-2
C778	E-1
C779	F-1
C780	F-1
C781	A-1
C782	A-1
C783	C-3
C784	C-3
C785	B-2
C786	B-3
C788	E-1
C789	E-1
C790	E-1
C793	E-2
C794	E-2
CN601	E-9
CN701	C-4
CN751	C-2
CN775	C-1
CT701	C-6
D601	A-2
D701	E-4
D702	F-5
D703	C-4
D705	F-5
FL601	C-9
IC601	G-4
IC602	A-5
IC603	C-4
IC609	B-8
IC610	C-8
IC611	G-8
IC613	A-9
IC614	E-10
IC701	E-4
IC702	C-6
IC703	F-6
IC704	A-6
IC705	G-6
IC751	B-1
IC752	F-3
IC753	F-2
IC754	E-2
IC755	G-4
IC772	F-1
IC773	F-2
IC774	F-1
IC775	E-1
IC776	F-1
IC778	B-3
L601	F-5
L602	E-8
L603	E-8
L604	F-8
L605	C-10
L606	C-9
L607	F-9
L608	E-10
L609	D-9
L610	E-9
L611	E-10
L612	E-9
L614	E-10
L702	E-5
L703	F-7
L704	E-6
L705	B-7
L706	F-7
L751	G-2
L752	F-3
L753	G-3
L775	A-1
L777	E-3
L778	B-3
Q604	B-9
Q605	C-10
Q606	C-10
Q607	C-9
Q701	C-5
Q751	G-3
Q752	C-3
R601	A-5
R602	F-5
R603	A-6
R604	G-4
R608	G-8
R612	E-10
R613	E-10
R614	E-10
R615	E-10
R617	C-7
R619	E-8
R620	G-4
R621	G-4
R622	C-9
R623	C-7
R624	G-9
R625	C-7
R626	G-4
R627	G-4
R628	G-4
R629	G-4
R630	F-8
R631	A-5
R634	D-7
R635	D-8
R636	C-8
R637	D-8
R638	D-8
R639	F-8
R640	C-8
R641	F-8
R643	C-8
R644	B-6
R645	B-9
R646	G-9
R647	G-8
R648	B-9
R649	G-4
R650	C-9
R651	C-10
R652	C-10
R653	G-8
R654	G-8
R656	F-8
R657	F-8
R658	F-8
R659	C-10
R661	C-10
R662	C-9
R663	C-10
R664	C-9
R665	C-9
R666	B-9
R667	E-10
R668	E-10
R701	C-4
R702	C-5
R703	C-5
R705	F-6
R708	G-6
R709	C-5
R711	E-6
R713	E-6
R714	G-6
R715	E-6
R716	F-5
R717	G-6
R718	A-6
R719	F-5
R721	A-7
R722	B-6
R723	B-7
R725	E-8
R726	B-7
R727	B-6
R728	E-6
R740	E-3
R741	G-4
R742	G-5
R743	F-3
R744	F-3
R745	F-3
R746	F-3
R747	G-3
R748	G-3
R749	F-4
R750	G-3
R751	C-2
R752	F-1
R753	A-1
R754	B-1
R755	B-1
R756	B-2
R757	A-1
R758	B-1
R759	F-1
R760	B-2
R761	B-3
R762	B-3
R764	G-3
R765	E-1
R766	F-1
R767	E-1
R768	E-2
R769	E-2
R770	E-2
R771	E-2
R772	E-1
R773	E-1
R774	E-1
R775	E-1
R776	E-2
R777	E-1
R778	E-1
R779	E-1
R780	E-1
R781	E-2
R782	E-1
R783	E-1
R784	B-6
R785	B-2
R787	A-2
R788	A-2
R789	B-2
R790	A-3
R792	B-3
R793	B-2
X601	A-6
X701	C-6
X775	B-4

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor

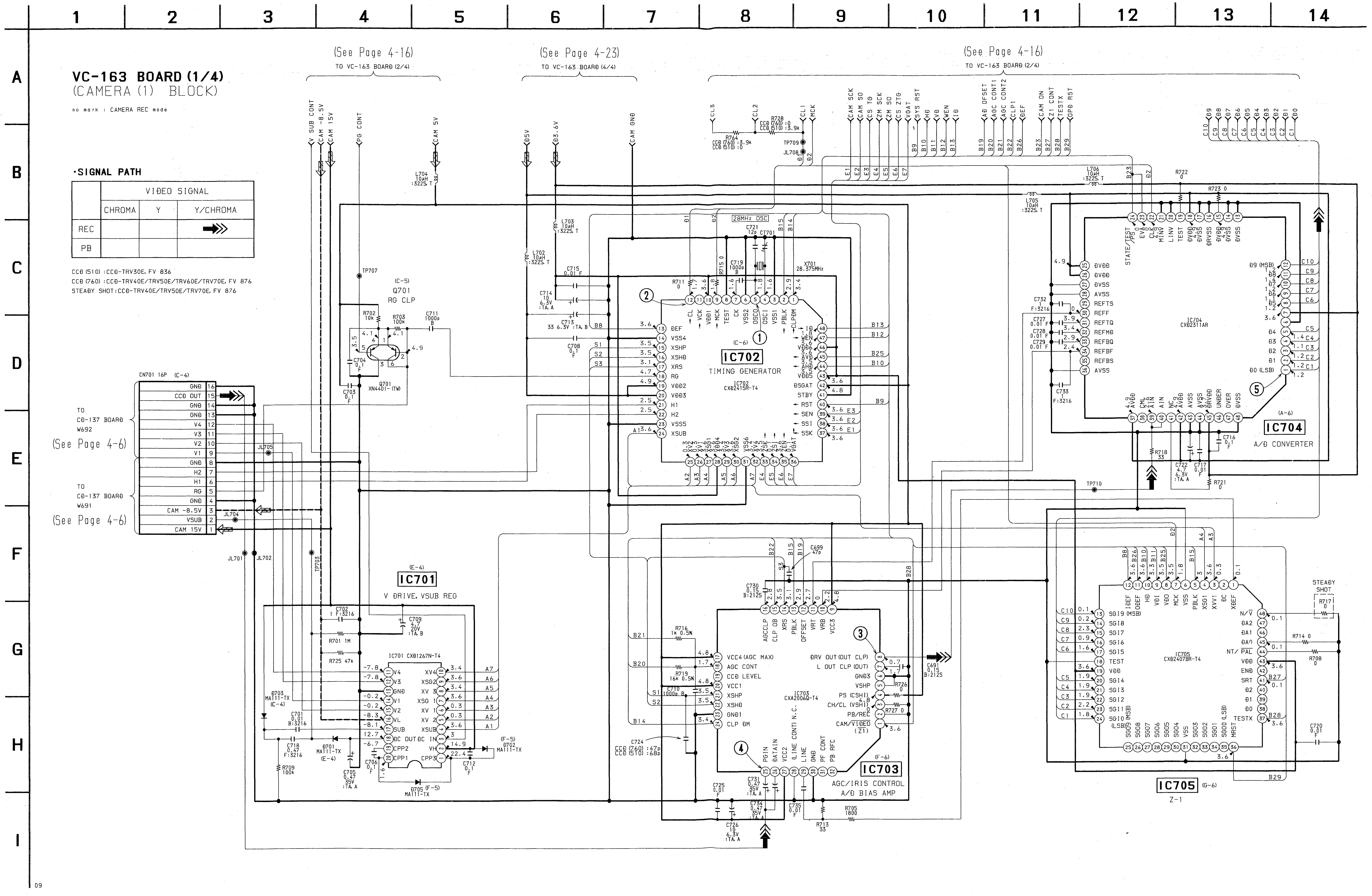



VS-126
(REC/PB Head Amplifier, Y/C Process, Hi 8 I/O, Electric Volume, Servo/System Control, Signal I/O)
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive, Steady Shot Control)
MI-25
(Mic)
SL-38
(Mecha Control)
MA-237
(Mic Amp)
PJ-70
(PAL Jog)

VC-163 BOARD (1/4)



VC-163 (CAMERA 1) SCHEMATIC DIAGRAM

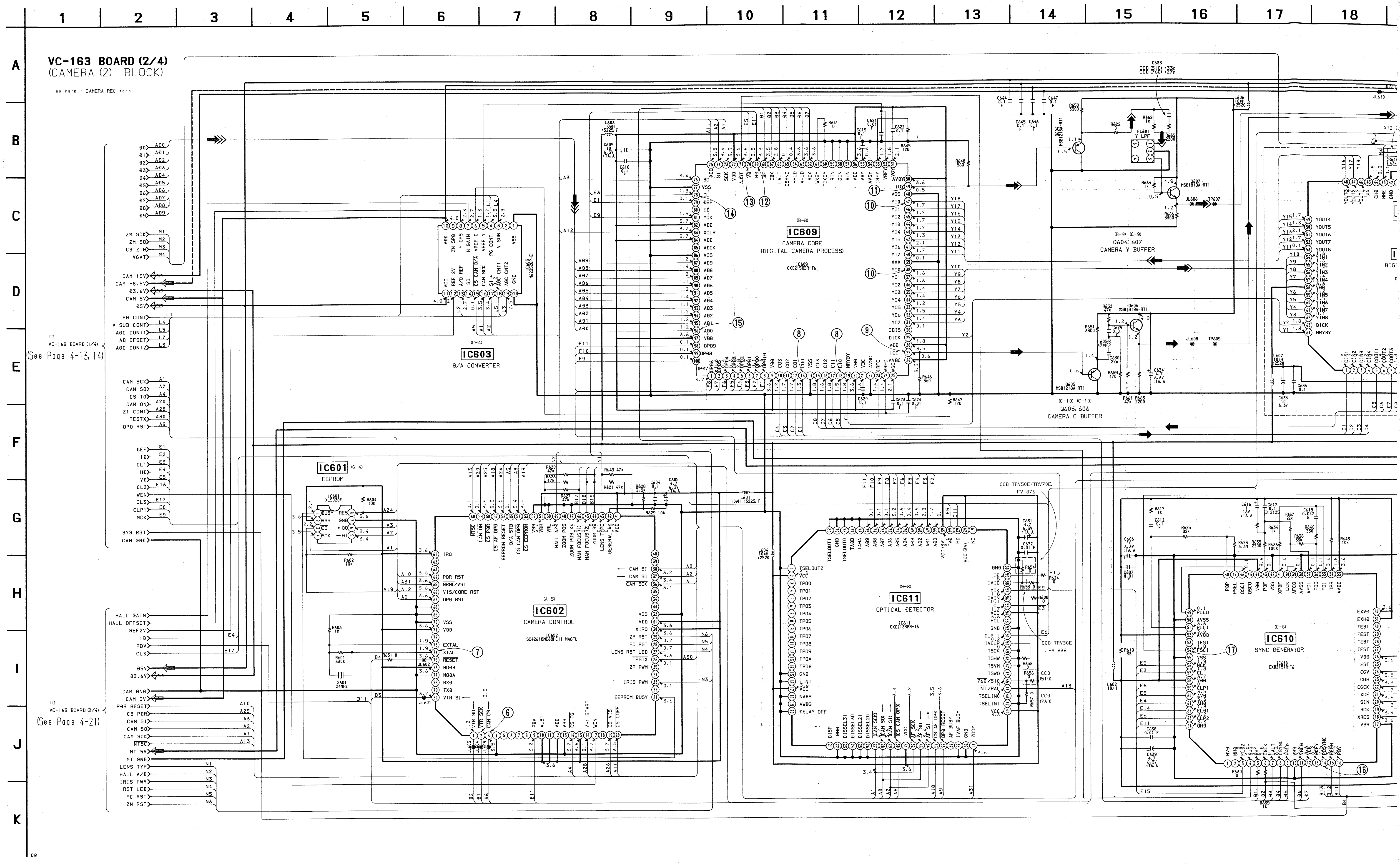


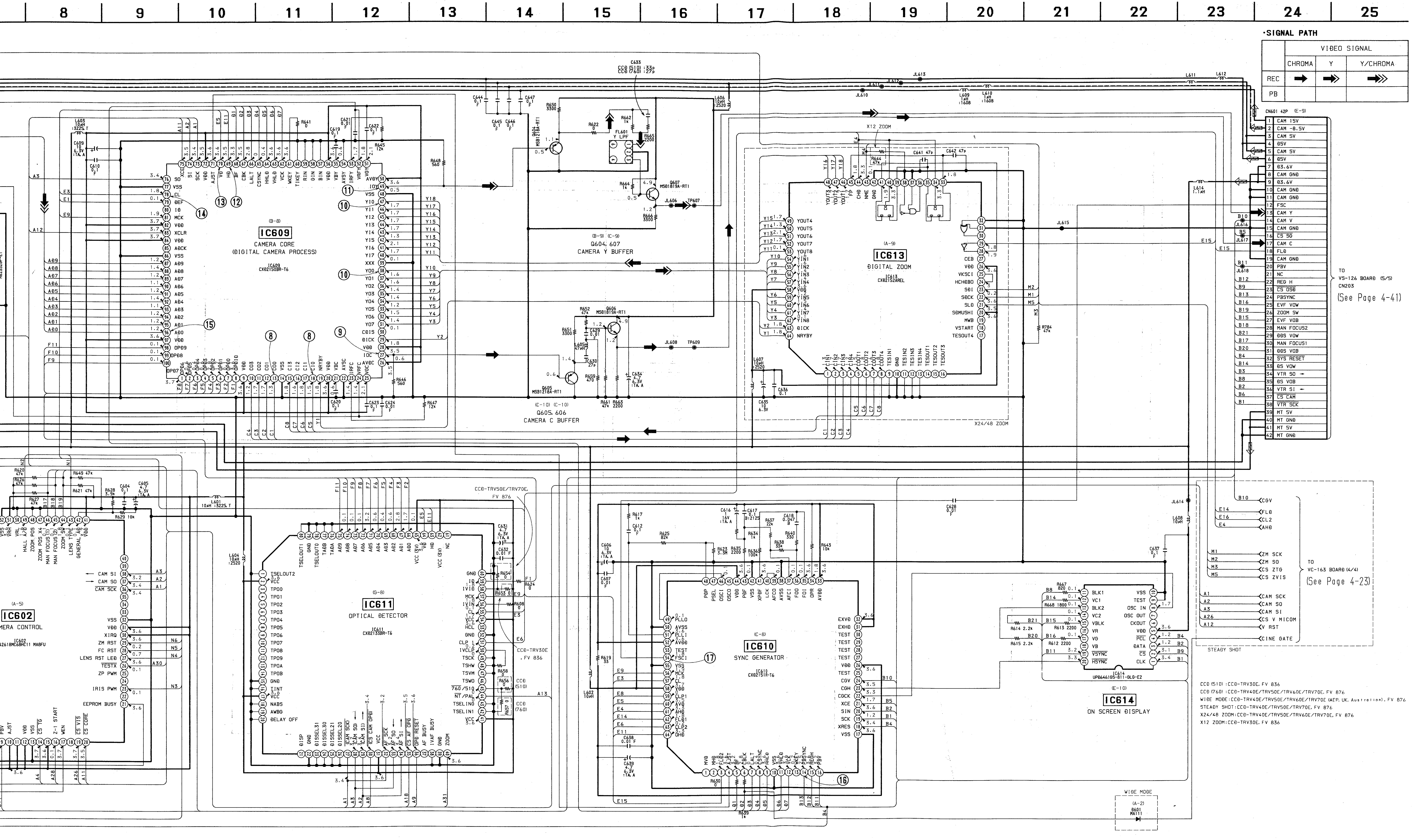
1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
VC-163 BOARD (1/4)
(CAMERA (1) BLOCK)
no mark : CAMERA REC mode
(See Page 4-16)
TO VC-163 BOARD (2/4)
(See Page 4-23)
TO VC-163 BOARD (4/4)
(See Page 4-16)
TO VC-163 BOARD (2/4)
V SUB CONT
CAM -8.5V
CAM 15V
PG CONT
CAM 5V
D5V
D3.6V
CAM GND
CL3
CL2
CL1
MCK
CAM SCK
CAM SO
CS TG
ZM SCK
ZM SO
CS ZTG
VGAT
SYS RST
HD
VD
WEN
ID
AD OFSET
AGC CONT1
AGC CONT2
CLP1
DEF
CAM ON
Z1 CONT
TESTX
DPD RST
CN701 16P (C-4)
TO CD-137 BOARD W692 (See Page 4-6)
TO CD-137 BOARD W691 (See Page 4-6)
GND 16
CCD OUT 15
GND 14
GND 13
V4 12
V3 11
V2 10
V1 9
GND 8
H2 7
H1 6
RG 5
GND 4
CAM -8.5V 3
VSUB 2
CAM 15V 1
Q701 RG CLP
Q701 XN4401-(TW)
IC702 TIMING GENERATOR
IC702 CXD2415R-T4
28MHz OSC
X701 28.375MHz
IC701 V DRIVE, VSUB REG
IC701 CXD1267N-T4
IC703 AGC/IRIS CONTROL A/D BIAS AMP
IC703 CXA2006Q-T4
IC704 A/D CONVERTER
IC704 CXD2311AR
IC705 Z-1
IC705 CXD2407BR-T4
STEADY SHOT
CCD (510) :CCD-TRV30E, FV 836
CCD (760) :CCD-TRV40E/TRV50E/TRV60E/TRV70E, FV 876
STEADY SHOT:CCD-TRV40E/TRV50E/TRV70E, FV 876

·SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			➡
PB			

VC-163 (CAMERA 2) SCHEMATIC DIAGRAM


VC-163 BOARD (2/4)
(CAMERA (2) BLOCK)
no mark : CAMERA REC mode
TO VC-163 BOARD (1/4) (See Page 4-13, 14)
TO VC-163 BOARD (3/4) (See Page 4-21)
IC603 D/A CONVERTER
IC609 CAMERA CORE (DIGITAL CAMERA PROCESS) CXD2150BR-T6
IC601 EEPROM XL9020F
IC602 CAMERA CONTROL SC42618MC68HC11 MA8FU
IC611 OPTICAL DETECTOR CXD2133BR-T6
IC610 SYNC GENERATOR CXD2151R-T6
Q604, 607 CAMERA Y BUFFER
Q605, 606 CAMERA C BUFFER
FL601 Y LPF
X601 24MHz


8
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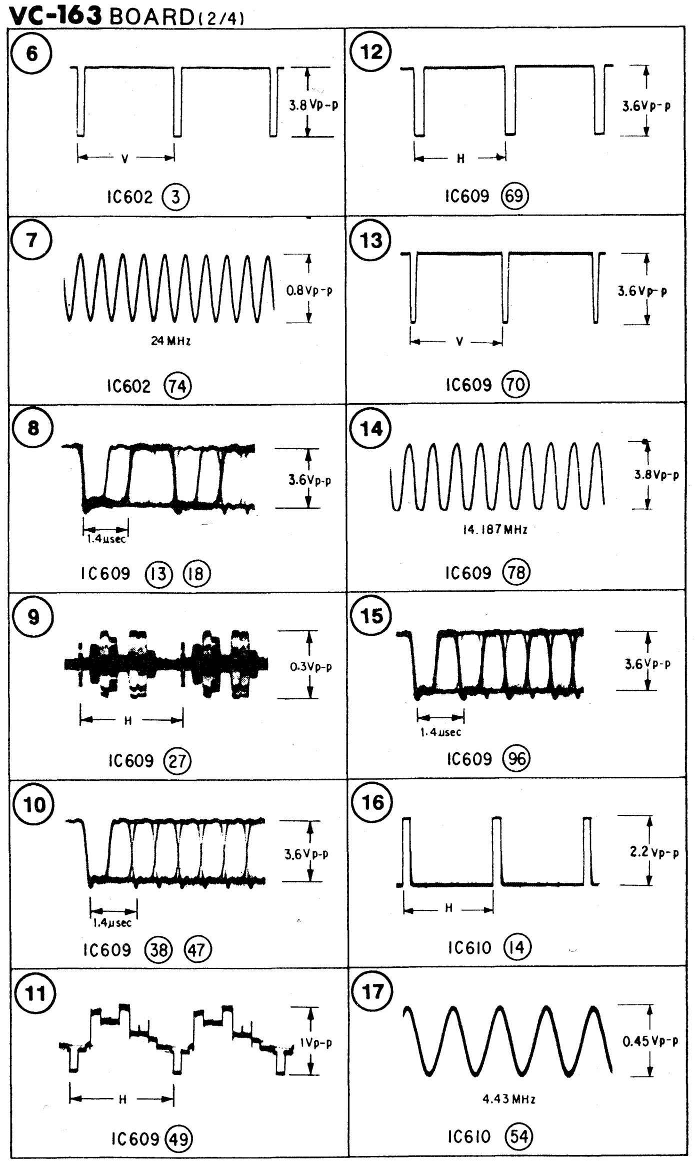
13
14
15
16
17
18
19
20
21
22
23
24
25
IC609
CAMERA CORE
(DIGITAL CAMERA PROCESS)
IC609 CX02150BR-T6
(B-8)
Q604, 607
CAMERA Y BUFFER
(B-9) (C-9)
FL601 Y LPF
Q605, 606
CAMERA C BUFFER
(C-10) (C-10)
IC613
DIGITAL ZOOM
IC613 CX02152AREL
(A-9)
X12 ZOOM
X24/48 ZOOM
IC602
CAMERA CONTROL
(A-5)
IC611
OPTICAL DETECTOR
IC611 CX02133BR-T6
(G-8)
CCD-TRV50E/TRV70E, FV 876
CCD-TRV30E, FV 836
IC610
SYNC GENERATOR
IC610 CX02151R-T6
(C-8)
IC614
ON SCREEN DISPLAY
IC614 UPD6461GS-B11-0LG-E2
(E-10)
CN601 42P (E-9)
1 CAM 15V
2 CAM -8.5V
3 CAM 5V
4 D5V
5 CAM 5V
6 D5V
7 D3.6V
8 CAM GND
9 D3.6V
10 CAM GND
11 CAM GND
12 FSC
13 CAM Y
14 CAM V
15 CAM GND
16 CS SG
17 CAM C
18 FLD
19 CAM GND
20 PBV
21 NC
22 REG H
23 CS OSD
24 PBSYNC
25 EVF VDW
26 ZOOM SW
27 EVF VOD
28 MAN FOCUS2
29 DDS VDW
30 MAN FOCUS1
31 DDS VOD
32 SYS RESET
33 DS VDW
34 VTR SO →
35 DS VOD
36 VTR SI ←
37 CS CAM
38 VTR SCK
39 MT 5V
40 MT GND
41 MT 5V
42 MT GND
TO VS-126 BOARD (5/5) CN203
(See Page 4-41)
CGV
FLD
CL2
AHD
ZM SCK
ZM SO
CS ZTG
CS ZVIS
TO VC-163 BOARD (4/4)
(See Page 4-23)
CAM SCK
CAM SO
CAM SI
CS V MICOM
V RST
CINE GATE
STEADY SHOT
WIDE MODE
(A-2)
D601 MA111

·SIGNAL PATH

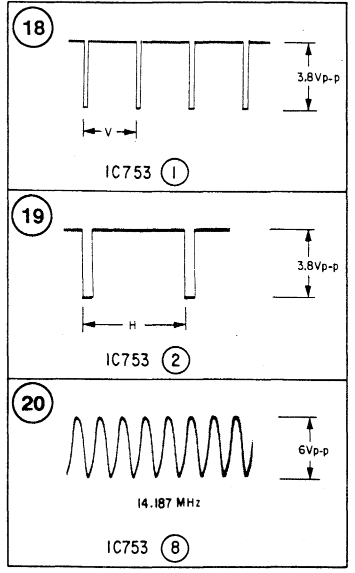
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡»	➡»»
PB			

CCD (510) :CCD-TRV30E, FV 836
CCD (760) :CCD-TRV40E/TRV50E/TRV60E/TRV70E, FV 876
WIDE MODE:CCD-TRV40E/TRV50E/TRV60E/TRV70E (AEP, UK, Australian), FV 876
STEADY SHOT:CCD-TRV40E/TRV50E/TRV70E, FV 876
X24/48 ZOOM:CCD-TRV40E/TRV50E/TRV60E/TRV70E, FV 876
X12 ZOOM:CCD-TRV30E, FV 836

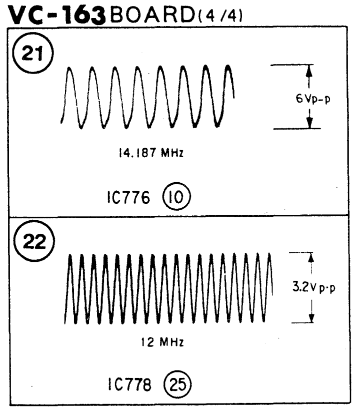
VC-163 BOARD(2/4)



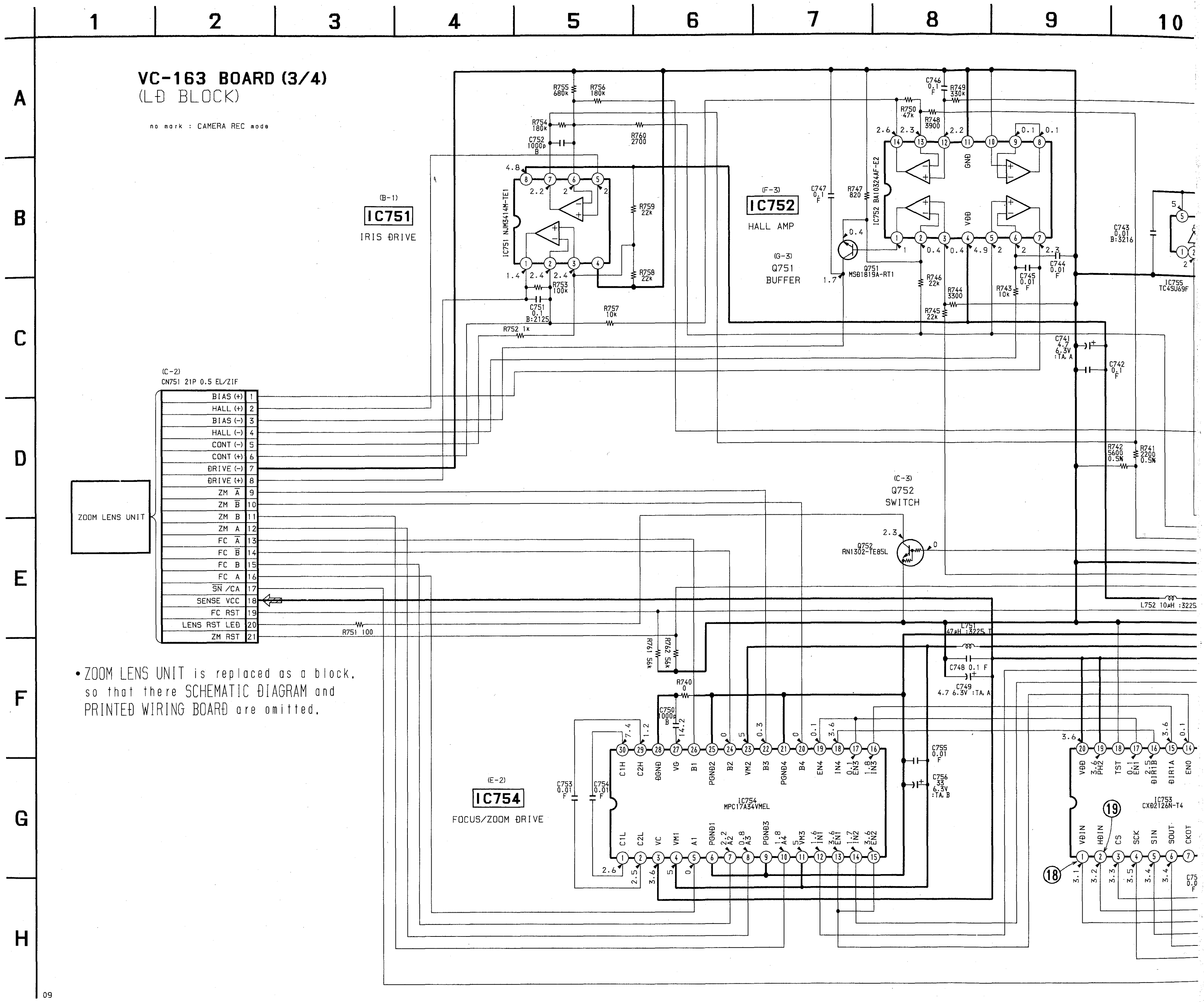
VC-163 BOARD(3/4)



VC-163 BOARD(4/4)

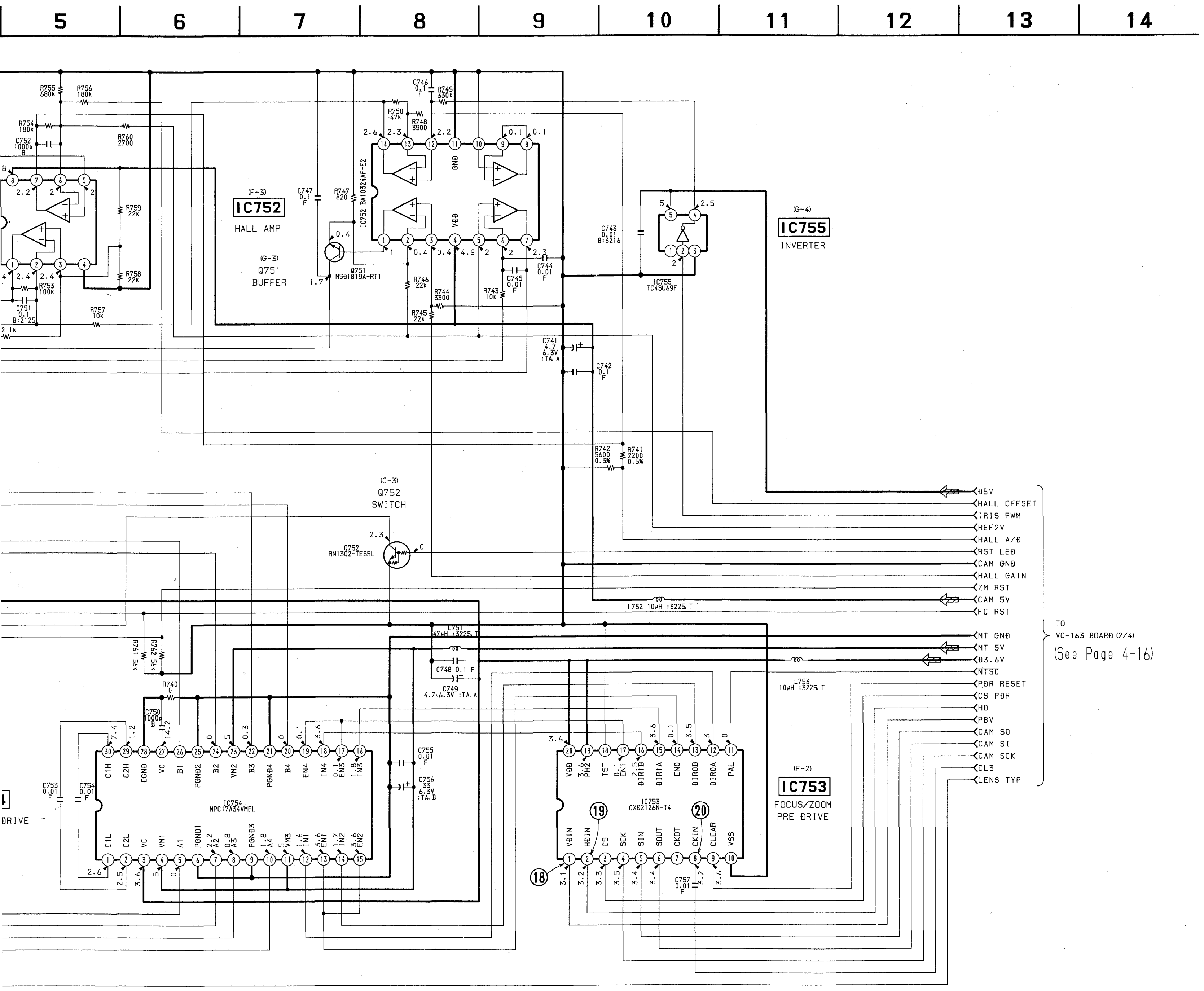


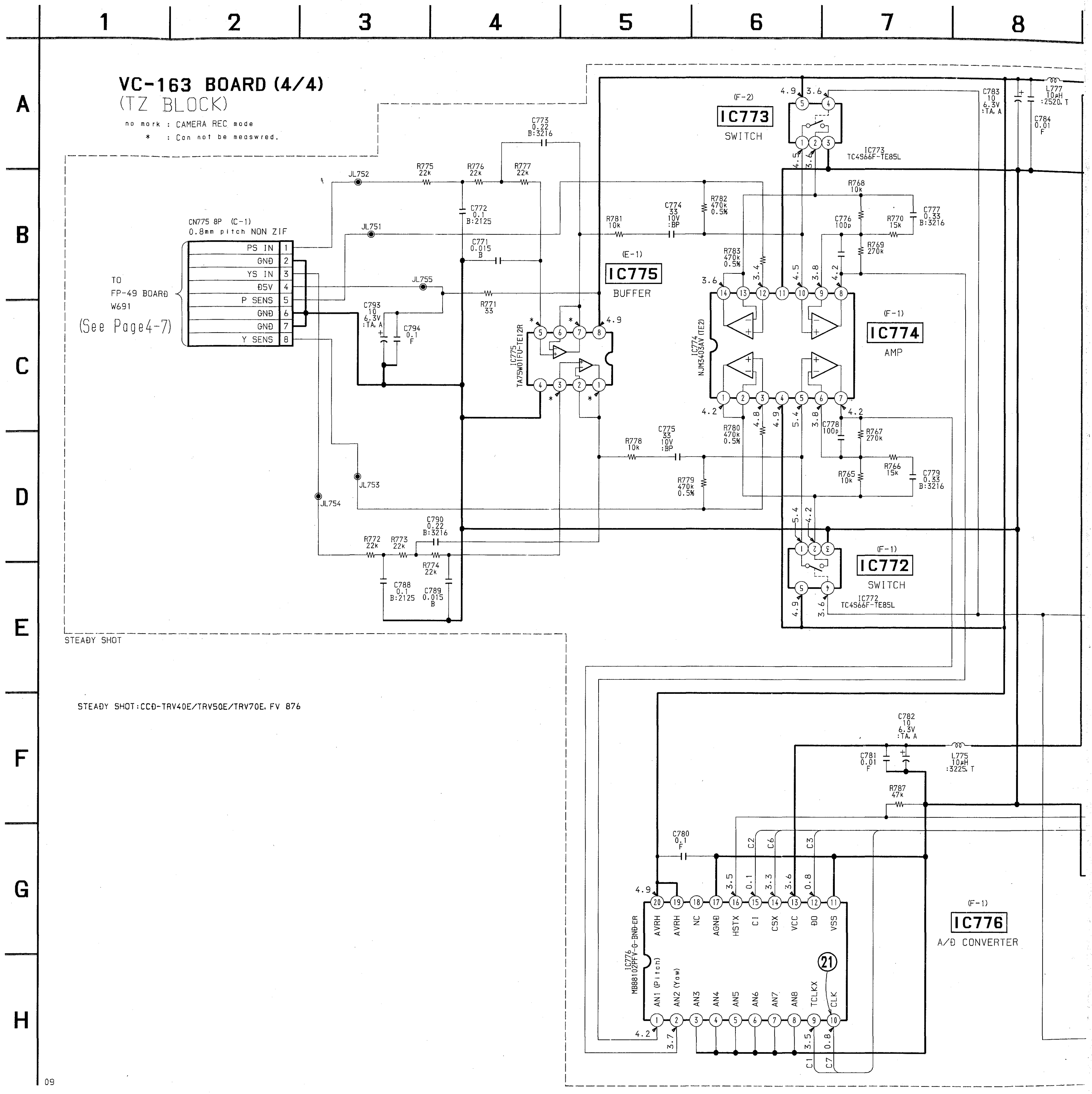
VC-163 (LENS DRIVE) SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
VC-163 BOARD (3/4)
(LD BLOCK)
no mark : CAMERA REC mode
(B-1)
IC751
IRIS DRIVE
IC751 NJM3414M-TE1
(F-3)
IC752
HALL AMP
IC752 BA10324AF-E2
(G-3)
Q751
BUFFER
Q751 MSB1819A-RT1
(C-2)
CN751 21P 0.5 EL/ZIF
BIAS (+)
HALL (+)
BIAS (-)
HALL (-)
CONT (-)
CONT (+)
DRIVE (-)
DRIVE (+)
ZM A
ZM B
ZM B
ZM A
FC A
FC B
FC B
FC A
SN /CA
SENSE VCC
FC RST
LENS RST LED
ZM RST
ZOOM LENS UNIT
(C-3)
Q752
SWITCH
Q752 RN1302-TE85L
(E-2)
IC754
FOCUS/ZOOM DRIVE
IC754 MPC17A34VMEL
IC753 CXD2126N-T4
IC755 TC4S69F
R751 100
L752 10uH
⑱
⑲
09

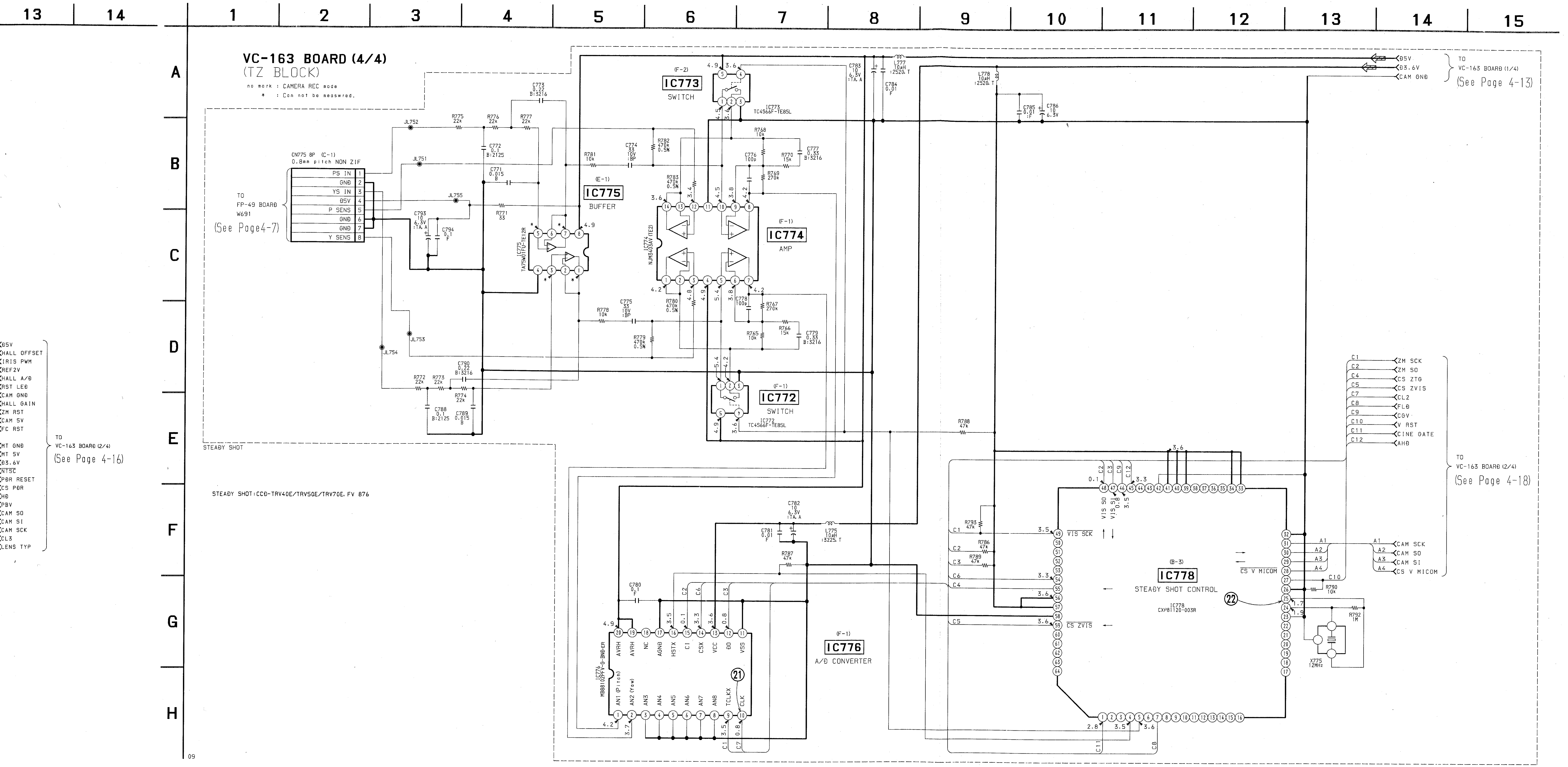
• ZOOM LENS UNIT is replaced as a block, so that there SCHEMATIC DIAGRAM and PRINTED WIRING BOARD are omitted.

VC-163 (STEADY SHOT CONTROL) SCHEMATIC DIAGRAM

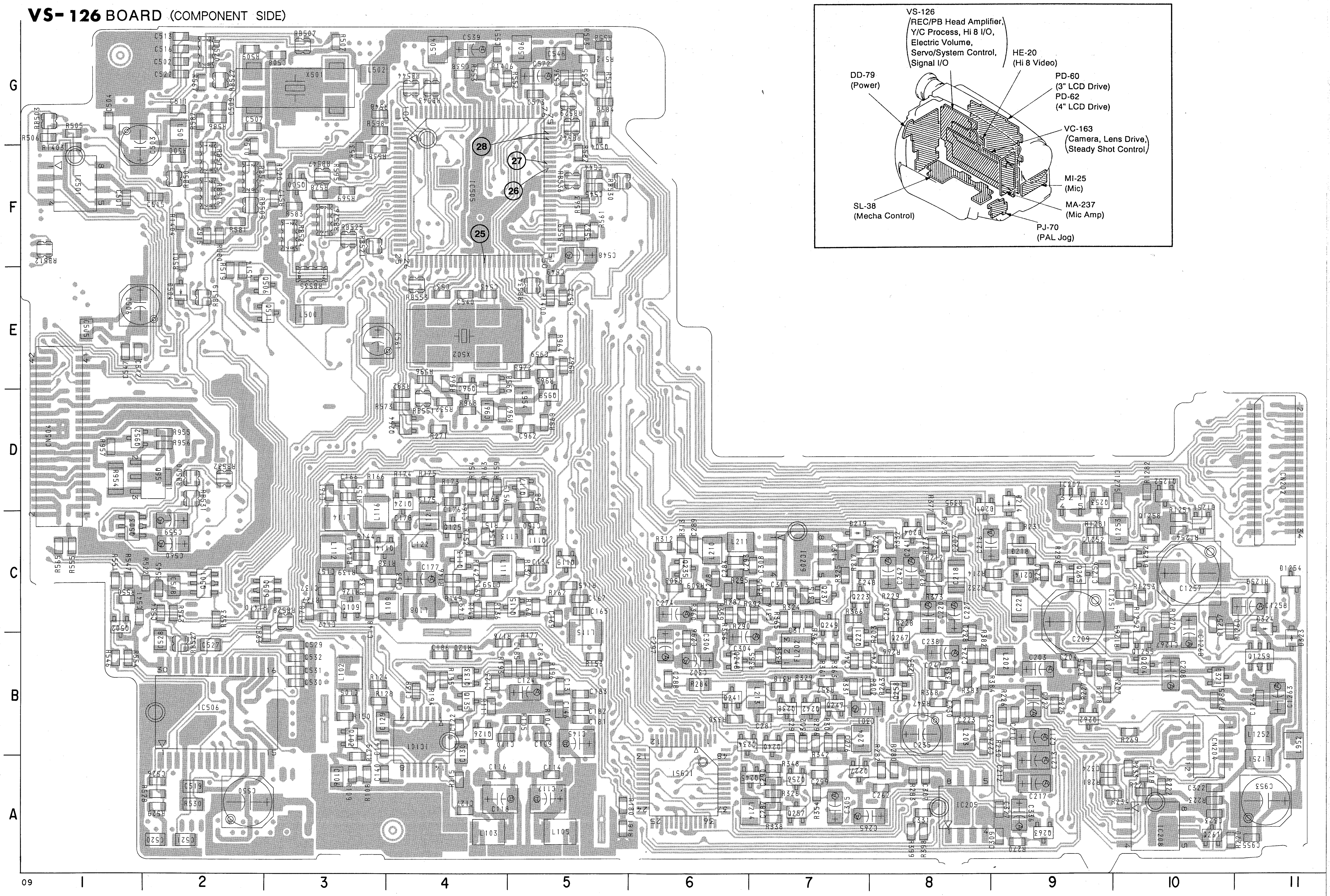

5
6
7
8
9
10
11
12
13
14
(F-3)
IC752
HALL AMP
(G-3)
Q751
BUFFER
Q751 MSD1819A-RT1
IC752 BA10324AF-E2
(G-4)
IC755
INVERTER
IC755 TC4SU69F
(C-3)
Q752
SWITCH
Q752 RN1302-TE85L
B5V
HALL OFFSET
IRIS PWM
REF2V
HALL A/D
RST LED
CAM GND
HALL GAIN
ZM RST
CAM 5V
FC RST
MT GND
MT 5V
D3.6V
NTSC
PDR RESET
CS PDR
HD
PBV
CAM SO
CAM SI
CAM SCK
CL3
LENS TYP
TO
VC-163 BOARD (2/4)
(See Page 4-16)
L752 10μH :3225 T
L753 10μH :3225 T
IC754
MPC17A34VMEL
(F-2)
IC753
FOCUS/ZOOM
PRE DRIVE
IC753 CXD2126N-T4
⑱
⑲
⑳
DRIVE


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
VC-163 BOARD (4/4)
(TZ BLOCK)
no mark : CAMERA REC mode
* : Can not be measured.
CN775 8P (C-1)
0.8mm pitch NON ZIF
PS IN
GND
YS IN
B5V
P SENS
GND
GND
Y SENS
TO
FP-49 BOARD
W691
(See Page 4-7)
JL751
JL752
JL753
JL754
JL755
(F-2)
IC773
SWITCH
IC773 TC4S66F-TE85L
(E-1)
IC775
BUFFER
IC775 TA75W01FU-TE12R
(F-1)
IC774
AMP
IC774 NJM3403AV(TE2)
(F-1)
IC772
SWITCH
IC772 TC4S66F-TE85L
(F-1)
IC776
A/D CONVERTER
IC776 MB88102PFV-G-BND-ER
STEADY SHOT
STEADY SHOT:CCD-TRV40E/TRV50E/TRV70E, FV 876
L777 10μH :2520 T
L775 10μH :3225 T
㉑
09

VC-163 (STEADY SHOT CONTROL) SCHEMATIC DIAGRAM


13
14
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
VC-163 BOARD (4/4)
(TZ BLOCK)
no mark : CAMERA REC mode
* : Can not be measwred.
CN775 8P (C-1)
0.8mm pitch NON ZIF
PS IN 1
GNĐ 2
YS IN 3
Đ5V 4
P SENS 5
GNĐ 6
GNĐ 7
Y SENS 8
TO
FP-49 BOARĐ
W691
(See Page4-7)
JL751
JL752
JL753
JL754
JL755
R775 22k
R776 22k
R777 22k
C773 0.22 B:3216
C772 0.1 B:2125
C771 0.015 B
R771 33
C793 10 6.3V :TA, A
C794 0.1 F
R781 10k
C774 33 10V :BP
R782 470k 0.5%
(E-1)
IC775
BUFFER
IC775 TA75W01FU-TE12R
4.9
(F-2)
IC773
SWITCH
IC773 TC4S66F-TE85L
4.9
3.6
4.5
3.6
R768 10k
C776 100p
R770 15k
C777 0.33 B:3216
R769 270k
R783 470k 0.5%
3.6
3.4
4.5
3.8
4.2
(F-1)
IC774
AMP
IC774 NJM3403AV (TE2)
4.2
4.8
4.9
5.4
3.8
4.2
R780 470k 0.5%
C778 100p
R767 270k
R778 10k
C775 33 10V :BP
R779 470k 0.5%
R765 10k
R766 15k
C779 0.33 B:3216
C783 10 6.3V :TA, A
C784 0.01 F
L777 10µH :2520, T
L778 10µH :2520, T
C785 0.01 :F
C786 10 6.3V
R772 22k
R773 22k
R774 22k
C790 0.22 B:3216
C788 0.1 B:2125
C789 0.015 B
5.4
4.2
(F-1)
IC772
SWITCH
IC772 TC4S66F-TE85L
4.9
3.6
STEAĐY SHOT
STEAĐY SHOT:CCĐ-TRV40E/TRV50E/TRV70E, FV 876
R788 47k
C782 10 6.3V :TA, A
C781 0.01 F
L775 10µH :3225, T
R787 47k
C780 0.1 F
C2
C6
C3
4.9
3.5
0.1
3.3
3.6
0.8
AVRH
AVRH
NC
AGNĐ
HSTX
CI
CSX
VCC
ĐO
VSS
(F-1)
IC776
A/Đ CONVERTER
IC776 MB88102PFV-G-BNĐ-ER
㉑
AN1 (Pitch)
AN2 (Yaw)
AN3
AN4
AN5
AN6
AN7
AN8
TCLKX
CLK
4.2
3.7
3.5
0.8
C1
C7
3.6
C2
C3
C9
C12
0.1
3.3
VIS SO
VIS SI
0.8
3.5
R793 47k
C1
3.5
VIS SCK
C2
R786 47k
C3
R789 47k
C6
3.3
C4
3.6
C5
3.6
CS ZVIS
(B-3)
IC778
STEAĐY SHOT CONTROL
IC778 CXP81120-003R
㉒
CS V MICOM
1.7
1.9
R790 10k
R792 1M
X775 12MHz
2.8
3.5
3.6
C11
C8
C10
A1
A2
A3
A4
Đ5V
Đ3.6V
CAM GNĐ
TO
VC-163 BOARĐ (1/4)
(See Page 4-13)
C1 ZM SCK
C2 ZM SO
C4 CS ZTG
C5 CS ZVIS
C7 CL2
C8 FLĐ
C9 CGV
C10 V RST
C11 CINE GATE
C12 AHĐ
A1 CAM SCK
A2 CAM SO
A3 CAM SI
A4 CS V MICOM
TO
VC-163 BOARĐ (2/4)
(See Page 4-18)
Đ5V
HALL OFFSET
IRIS PWM
REF2V
HALL A/Đ
RST LEĐ
CAM GNĐ
HALL GAIN
ZM RST
CAM 5V
FC RST
MT GNĐ
MT 5V
Đ3.6V
NTSC
PĐR RESET
CS PĐR
HĐ
PBV
CAM SO
CAM SI
CAM SCK
CL3
LENS TYP
TO
VC-163 BOARĐ (2/4)
(See Page 4-16)
09

VS-126 (REC/PB HEAD AMPLIFIER, Y/C PROCESS, Hi 8 I/O, ELECTRIC VOLUME, SERVO/SYSTEM CONTROL, SIGNAL I/O) PRINTED WIRING BOARD


VS-126 BOARD (COMPONENT SIDE)
G
F
E
D
C
B
A
09
1
2
3
4
5
6
7
8
9
10
11
28
27
26
25
VS-126
(REC/PB Head Amplifier, Y/C Process, Hi 8 I/O, Electric Volume, Servo/System Control, Signal I/O)
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive, Steady Shot Control)
MI-25
(Mic)
SL-38
(Mecha Control)
MA-237
(Mic Amp)
PJ-70
(PAL Jog)

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor

C
Q
B E
3 2 1
Q
4 5 6

VS-126 BOARD(1/5)

IC102 ④ REC

②
0.36V p-p
0.16 μsec

IC102 ⑥ REC

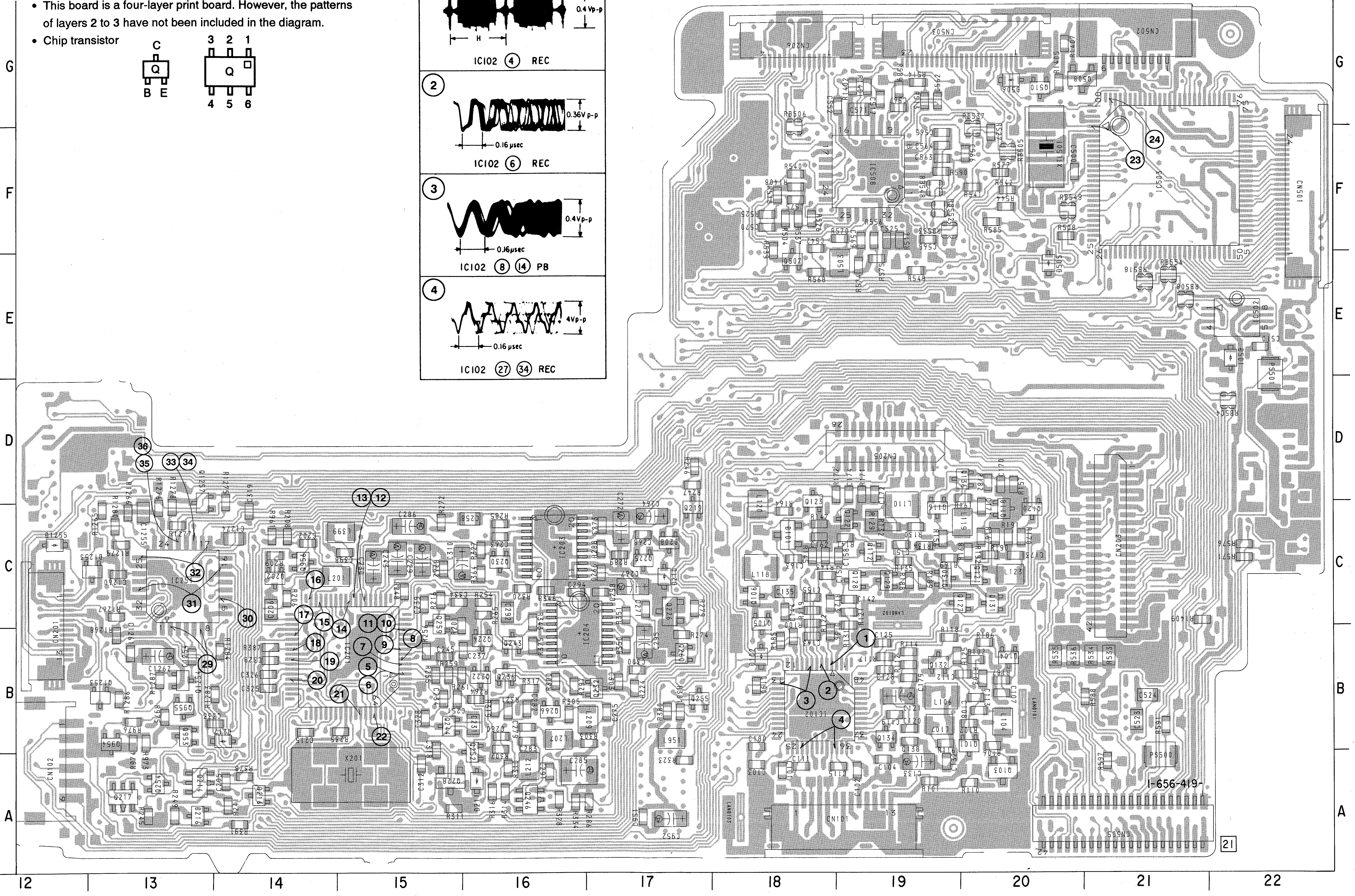
③
0.4Vp-p
0.16μsec

IC102 ⑧ ⑭ PB

④
4Vp-p
0.16 μsec

IC102 ㉗ ㉞ REC

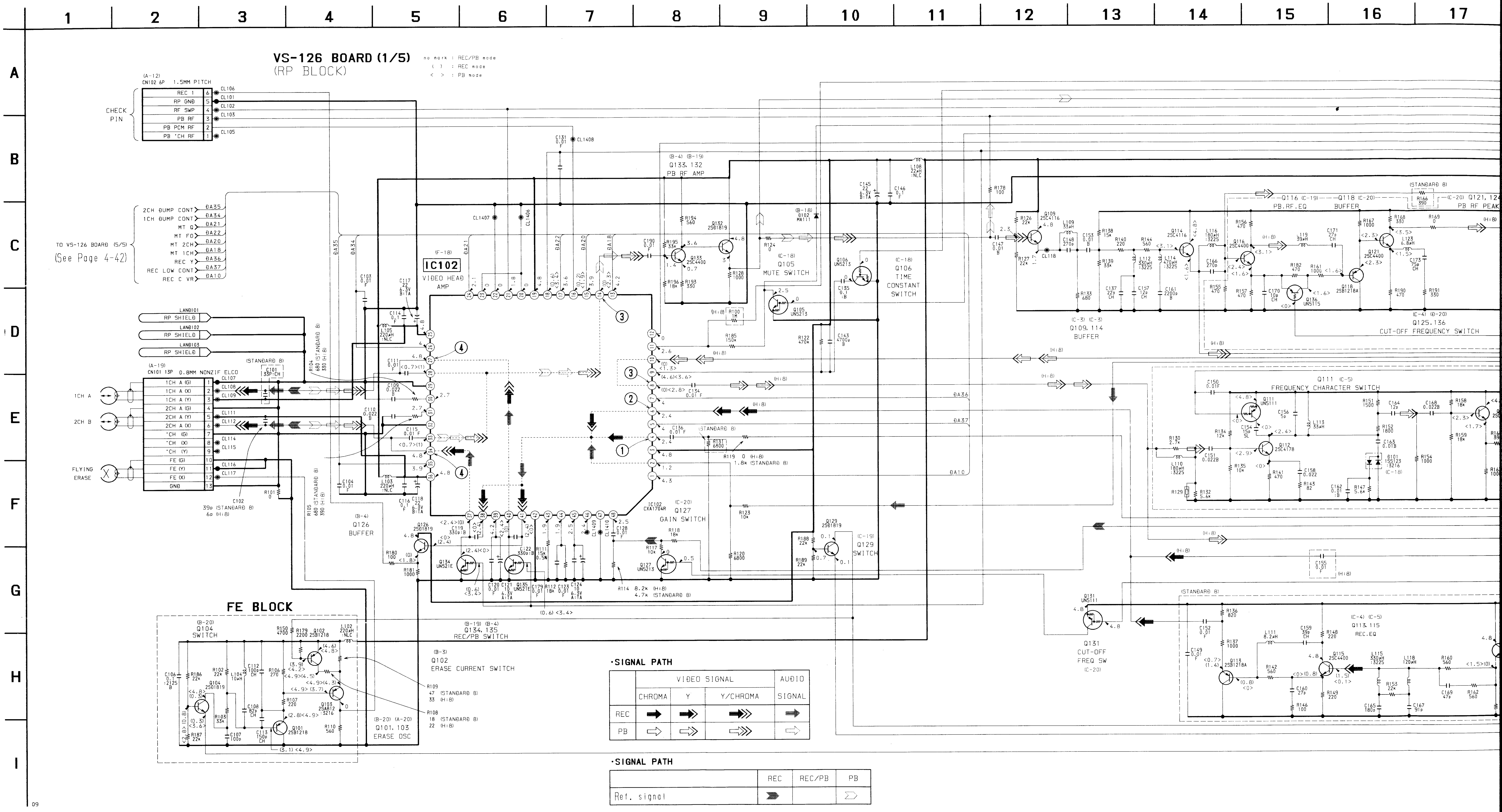
VS-126 BOARD (CONDUCTOR SIDE)


G
F
E
D
C
B
A
12
13
14
15
16
17
18
19
20
21
22
CN503
CN502
IC503
IC508
IC501
CN501
CN203
CN201
CN102
CN101
IC251
IC201
IC204
IC102
X201
X501
1-656-419-
21

VS-126 BOARD

C101	A-18
C102	A-19
C103	A-18
C104	A-19
C106	A-3
C107	B-20
C108	B-20
C109	B-5
C110	B-4
C111	A-18
C112	B-20
C113	B-20
C114	A-5
C115	A-19
C116	A-4
C117	A-5
C118	A-4
C119	B-19
C120	B-19
C121	B-19
C122	B-4
C123	B-4
C124	B-5
C128	B-19
C131	B-5
C134	C-5
C135	C-18
C136	B-18
C137	C-3
C143	B-18
C145	B-5
C146	B-5
C147	C-3
C148	C-3
C149	C-4
C150	C-5
C151	C-19
C152	C-18
C153	C-4
C154	C-4
C155	C-18
C156	D-5
C157	C-3
C158	C-19
C159	C-4
C160	C-4
C161	D-3
C162	C-18
C163	C-18
C164	C-4
C165	C-5
C166	D-3
C167	C-5
C168	D-4
C169	C-5
C170	D-20
C171	C-20
C172	D-19
C173	C-20
C175	D-4
C176	D-4
C177	C-4
C178	C-4
C179	B-19
C190	B-18
C202	C-14
C203	B-9
C204	B-9
C206	C-14
C207	C-8
C208	B-10
C209	C-9
C210	B-9
C211	B-9
C212	A-9
C213	A-9
C214	C-9
C215	B-14
C216	C-8
C217	A-9
C219	A-10
C220	C-8
C221	C-9
C222	B-9
C223	B-8
C227	C-8
C228	B-8
C229	C-15
C230	C-15
C231	B-16
C234	B-15
C235	B-8
C237	B-16
C238	B-8
C239	C-15
C240	B-7
C241	C-8
C242	C-8
C243	C-15
C244	B-7
C247	B-8
C248	C-7
C250	C-8
C251	B-15
C258	C-16
C262	A-8
C263	C-16
C264	C-17
C265	A-7
C266	C-17
C267	C-17
C268	C-17
C271	C-17
C272	C-17
C273	C-17
C274	C-6
C275	B-17
C276	B-7
C279	B-16
C281	B-7
C282	B-16
C284	C-6
C285	A-16
C286	C-15
C288	B-6
C289	C-6
C290	A-7
C291	A-16
C292	C-16
C293	C-6
C294	C-16
C295	B-17
C296	B-6
C297	B-6
C298	C-17
C299	A-7
C300	B-17
C301	B-7
C302	B-6
C303	B-17
C304	B-6
C305	A-7
C306	C-6
C307	A-8
C308	C-7
C310	C-15
C311	C-7
C312	A-15
C314	C-7
C315	C-7
C316	C-7
C328	B-15
C331	A-8
C333	B-14
C336	A-9
C398	C-15
C500	F-20
C501	F-1
C502	G-2
C503	F-1
C504	G-1
C506	E-1
C507	G-2
C508	G-3
C509	G-2
C510	E-22
C511	G-2
C512	E-1
C513	G-2
C514	E-2
C515	F-2
C516	G-2
C518	C-2
C519	A-2
C521	A-2
C522	G-2
C523	B-21
C524	B-21
C525	F-19
C526	A-2
C527	B-2
C528	B-2
C529	B-3
C530	B-3
C531	B-3
C532	B-3
C533	B-3
C534	C-2
C535	G-4
C536	G-4
C537	E-4
C538	G-4
C539	G-4
C540	E-4
C541	C-1
C543	E-4
C544	F-5
C545	F-5
C547	E-1
C548	F-5
C549	E-5
C550	A-2
C559	C-2
C560	C-2
C561	E-3
C562	G-19
C563	F-19
C564	F-19
C565	F-19
C566	F-20
C567	G-19
C568	F-19
C569	F-19
C570	F-18
C571	G-19
C572	G-4
C573	G-4
C953	A-11
C955	A-11
C959	E-5
C961	D-4
C962	D-5
C1251	C-10
C1252	C-9
C1254	B-13
C1255	C-13
C1256	C-9
C1257	C-10
C1258	C-11
C1260	C-13
C1261	B-13
C1262	B-13
C1263	B-11
C1264	B-11
C1268	B-10
C1274	C-14
C1275	D-10
CN101	A-19
CN102	A-12
CN201	B-12
CN202	D-11
CN203	C-21
CN204	B-10
CN205	D-19
CN206	G-18
CN502	G-21
CN503	G-19
CN504	D-1
CN505	A-21
D101	C-18
D102	B-18
D201	C-8
D204	C-8
D208	C-17
D214	D-9
D216	A-13
D217	B-14
D218	C-9
D219	C-7
D321	B-10
D323	B-11
D324	C-11
D501	E-22
D504	E-2
D505	E-20
D506	G-20
D1251	C-10
D1252	C-10
D1253	C-13
D1254	C-11
D1255	C-12
FL202	B-7
IC102	B-18
IC201	B-15
IC203	C-16
IC204	B-16
IC205	A-8
IC209	C-7
IC251	C-13
IC501	F-1
IC502	E-22
IC503	F-21
IC505	F-4
IC506	B-2
IC508	F-19
IC951	A-6
L102	B-3
L103	A-4
L104	B-20
L105	A-5
L108	C-4
L109	C-4
L110	C-19
L111	C-4
L112	C-3
L113	C-5
L114	C-3
L115	C-5
L116	C-3
L118	C-18
L119	C-20
L120	C-18
L121	C-4
L122	C-4
L123	C-20
L201	C-14
L202	B-9
L204	B-7
L207	B-16
L209	B-17
L210	C-6
L211	C-6
L213	B-7
L214	A-6
L399	C-15
L500	E-3
L501	G-2
L502	G-3
L503	E-19
L504	G-4
L506	G-4
L951	B-17
L952	B-11
L954	D-5
L1251	A-11
L1252	B-11
L1253	C-10
PS500	A-21
PS501	E-22
Q101	B-20
Q102	B-3
Q103	A-20
Q104	B-20
Q105	C-18
Q106	C-18
Q109	C-3
Q111	C-5
Q112	C-19
Q113	C-4
Q114	C-3
Q115	C-5
Q116	C-19
Q117	D-5
Q118	C-20
Q119	C-5
Q121	C-20
Q124	D-4
Q125	C-4
Q126	B-4
Q127	C-20
Q129	C-19
Q131	C-20
Q132	B-19
Q133	B-4
Q134	B-19
Q135	B-4
Q136	D-20
Q202	C-14
Q204	B-10
Q214	A-13
Q217	A-13
Q219	C-17
Q221	B-7
Q222	B-16
Q223	C-7
Q224	B-16
Q225	C-17
Q226	C-17
Q227	A-7
Q228	A-15
Q230	C-16
Q232	B-17
Q234	B-6
Q235	C-6
Q236	B-16
Q237	C-7
Q238	B-7
Q240	B-7
Q241	B-6
Q242	B-7
Q243	B-16
Q244	B-15
Q246	A-16
Q247	B-7
Q248	B-6
Q249	C-7
Q253	D-9
Q254	A-13
Q255	B-17
Q256	A-7
Q257	A-7
Q258	B-8
Q259	C-15
Q260	B-17
Q262	B-9
Q263	A-9
Q264	D-4
Q265	C-9
Q266	B-16
Q267	B-8
Q500	F-3
Q501	C-2
Q502	C-1
Q503	C-1
Q504	G-4
Q506	E-3
Q507	E-18
Q508	G-20
Q509	C-3
Q510	G-20
Q511	E-3
Q951	D-2
Q952	D-1
Q956	C-14
Q958	E-4
Q959	D-5
Q960	E-4
Q1252	D-10
Q1253	B-13
Q1254	B-13
Q1258	C-10
Q1259	B-11
R100	B-18
R101	A-19
R102	B-20
R103	B-20
R104	B-5
R105	B-5
R106	B-20
R107	B-20
R108	A-3
R109	A-3
R110	A-20
R111	B-4
R112	B-19
R114	B-19
R117	B-19
R118	B-19
R119	C-18
R120	B-4
R122	C-18
R123	C-18
R124	B-3
R126	C-3
R127	C-3
R128	B-3
R129	C-19
R130	C-19
R131	C-19
R132	C-19
R133	C-3
R134	C-19
R135	C-19
R136	C-4
R137	C-5
R138	C-4
R139	C-3
R140	C-3
R141	C-19
R142	C-4
R143	C-18
R144	C-3
R146	C-4
R147	C-18
R148	C-4
R149	C-4
R150	B-3
R151	C-4
R152	C-4
R153	B-5
R154	D-4
R155	D-3
R156	C-19
R157	D-20
R158	D-5
R159	D-4
R160	C-5
R162	C-5
R163	D-4
R164	C-18
R165	C-5
R166	D-3
R167	C-20
R168	C-20
R169	C-19
R171	D-19
R173	D-4
R174	D-4
R175	D-4
R178	C-3
R179	A-3
R180	A-5
R181	A-5
R182	D-20
R185	B-18
R186	B-20
R187	B-20
R188	C-19
R189	C-19
R190	C-20
R191	C-20
R193	B-4
R194	B-4
R195	B-4
R196	B-5
R201	C-15
R202	B-7
R203	B-8
R206	C-14
R207	B-10
R208	C-14
R209	C-14
R210	C-9
R211	B-9
R213	C-8
R214	C-8
R215	B-9
R216	C-15
R217	C-7
R218	B-9
R219	C-8
R224	B-17
R226	B-9
R228	C-8
R229	C-8
R230	B-9
R231	C-9
R232	C-8
R234	A-10
R235	B-15
R245	A-13
R246	D-17
R247	D-17
R253	B-8
R254	C-16
R255	B-15
R256	B-15
R259	B-15
R261	B-15
R262	C-15
R263	B-8
R264	B-16
R265	C-16
R266	B-8
R269	B-10
R270	A-9
R271	D-4
R272	C-15
R273	C-8
R274	B-17
R279	C-17
R280	A-8
R282	A-8
R283	A-8
R284	B-6
R285	C-16
R286	A-17
R287	C-6
R288	C-17
R289	C-17
R291	B-7
R292	C-7
R293	C-9
R296	B-7
R297	B-16
R300	B-16
R302	B-7
R303	B-17
R304	B-7
R305	B-16
R307	B-16
R308	C-6
R309	C-6
R312	C-6
R313	C-6
R314	A-16
R315	C-7
R316	A-16
R317	B-16
R318	B-7
R319	B-16
R320	C-16
R321	B-16
R322	C-7
R323	A-17
R324	C-7
R325	C-7
R327	C-16
R328	A-16
R329	B-7
R330	B-6
R331	B-7
R332	C-8
R334	A-16
R338	A-7
R339	B-8
R342	A-7
R343	C-16
R346	C-16
R347	B-8
R348	A-7
R350	B-17
R351	C-17
R354	A-7
R355	B-7
R356	C-6
R357	B-7
R358	B-7
R359	C-6
R360	C-6
R361	B-7
R362	C-7
R363	B-7
R365	C-7
R366	C-7
R368	B-8
R373	C-8
R375	B-16
R380	B-17
R381	B-17
R383	B-8
R387	B-14
R391	A-14
R395	C-8
R398	A-8
R399	A-8
R500	F-2
R501	F-2
R503	G-4
R505	G-1
R506	G-1
R507	G-3
R508	F-20
R509	G-2
R510	F-2
R511	G-4
R512	G-4
R513	G-19
R514	G-19
R515	F-2
R516	F-19
R517	F-3
R518	F-18
R519	E-2
R520	F-3
R522	C-2
R525	F-18
R526	F-18
R527	F-20
R528	A-2
R529	A-2
R530	A-2
R531	F-3
R532	D-4
R533	B-21
R534	B-21
R535	B-20
R536	B-20
R537	F-18
R538	F-3
R539	F-18
R540	F-18
R541	F-20
R542	F-20
R543	C-2
R544	F-20
R546	B-1
R548	G-3
R549	E-19
R550	C-1
R551	C-1
R552	G-4
R553	G-4
R554	B-1
R555	C-1
R556	F-19
R558	G-4
R561	F-5
R562	F-5
R563	F-5
R567	G-2
R569	F-3
R570	F-19
R572	E-5
R573	D-4
R575	E-19
R577	F-20
R578	F-3
R580	F-2
R581	F-2
R582	F-5
R584	G-4
R585	F-20
R586	G-2
R587	G-2
R588	B-21
R589	G-19
R590	F-19
R591	B-21
R592	D-4
R595	F-3
R596	E-4
R597	A-21
R954	D-1
R955	D-2
R956	D-2
R957	D-1
R961	C-14
R962	E-5
R964	E-5
R965	E-5
R966	E-4
R967	D-4
R968	D-4
R969	D-5
R972	E-5
R1251	C-10
R1252	C-10
R1259	C-11
R1260	B-10
R1265	C-13
R1266	C-13
R1267	C-13
R1268	B-13
R1270	C-10
R1275	C-14
R1279	C-13
R1280	C-13
R1281	C-9
R1282	D-10
R1284	B-14
R1285	B-10
R1286	B-13
R1287	B-13
R1400	E-5
R1401	G-19
R1403	F-1
R1404	F-2
R1405	G-20
R1406	G-4
R1407	G-20
R1409	C-21
R1410	C-2
RB500	D-2
RB501	F-2
RB503	G-1
RB504	D-22
RB505	F-20
RB506	F-18
RB507	G-3
RB508	E-21
RB509	F-2
RB512	F-1
RB514	F-2
RB515	F-2
RB516	F-2
RB518	E-21
RB519	E-2
RB520	G-2
RB521	F-3
RB522	G-2
RB524	F-3
RB525	F-3
RB526	F-3
RB527	B-2
RB528	C-3
RB529	G-4
RB530	F-5
RB531	D-2
RB532	D-2
RB533	F-19
RB534	E-5
RB535	E-3
RB536	F-5
RB537	F-20
RB542	G-4
RB543	G-4
RB544	G-4
RB547	F-3
RB548	F-19
RB549	F-20
RB551	D-4
RB552	F-19
RB553	E-4
RB554	E-21
X201	A-15
X501	G-3
X502	E-4
XTL501	F-20

VS-126 (REC/PB HEAD AMPLIFIER) SCHEMATIC DIAGRAM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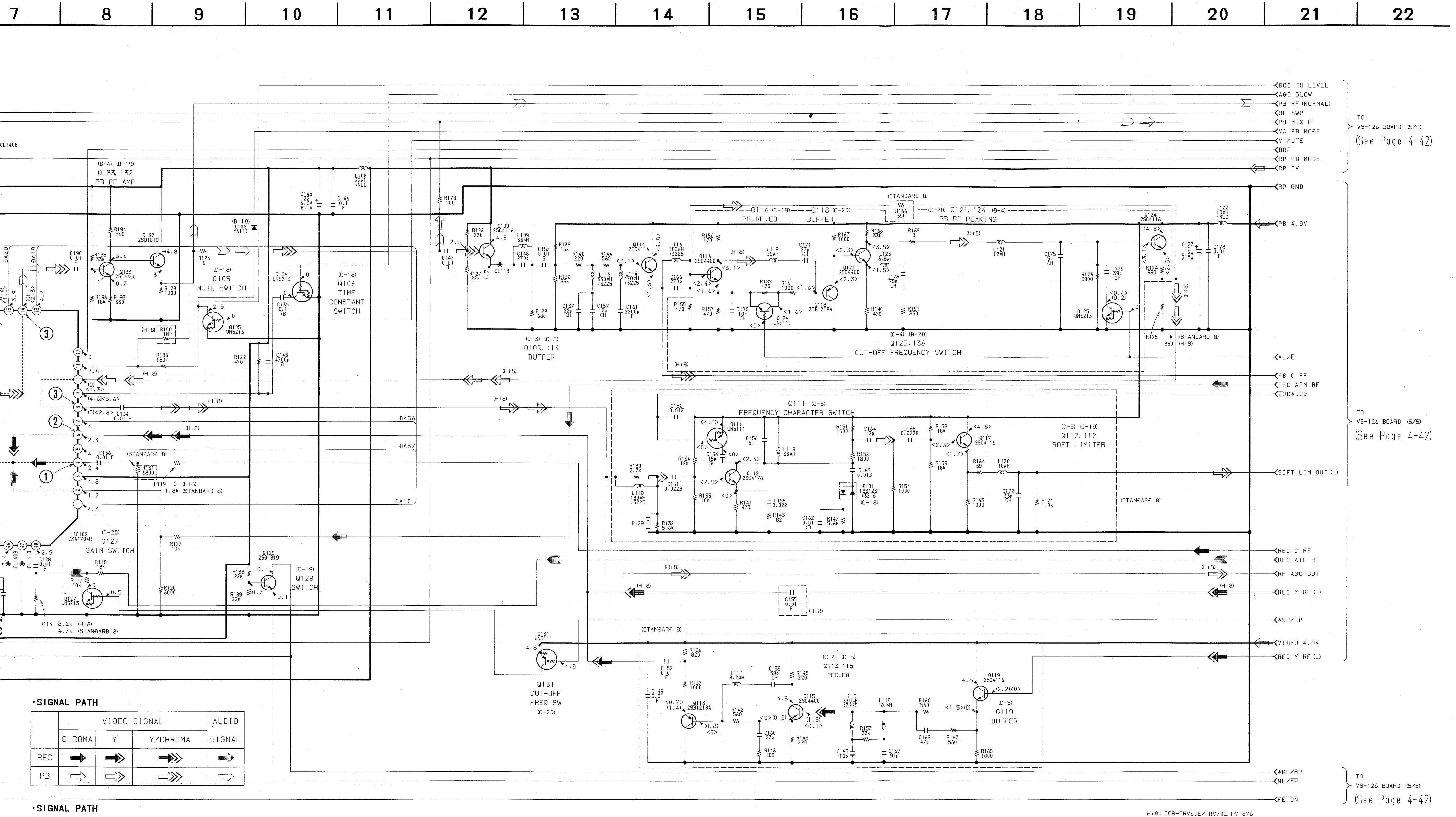
I
VS-126 BOARD (1/5)
(RP BLOCK)
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
(A-12)
CN102 6P 1.5MM PITCH
REC 1
RP GND
RF SWP
PB RF
PB PCM RF
PB 'CH RF
CHECK PIN
CL106
CL101
CL102
CL103
CL105
2CH DUMP CONT
1CH DUMP CONT
MT Q
MT FG
MT 2CH
MT 1CH
REC Y
REC LOW CONT
REC C VR
TO VS-126 BOARD (5/5)
(See Page 4-42)
ÐA35
ÐA34
ÐA21
ÐA22
ÐA20
ÐA18
ÐA36
ÐA37
ÐA10
LAND101
LAND102
LAND103
RP SHIELD
(A-19)
CN101 13P 0.8MM NONZIF ELCO
1CH A (G)
1CH A (X)
1CH A (Y)
2CH A (G)
2CH A (Y)
2CH A (X)
'CH (G)
'CH (X)
'CH (Y)
FE (G)
FE (Y)
FE (X)
GND
1CH A
2CH B
FLYING ERASE
(F-18)
IC102
VIDEO HEAD AMP
IC102 CXA1704R
(B-41) (B-19)
Q133, 132
PB RF AMP
(B-18) D102 MA111
(C-18) Q105 MUTE SWITCH
(C-18) Q106 TIME CONSTANT SWITCH
(C-20) Q127 GAIN SWITCH
(C-19) Q129 SWITCH
(B-4) Q126 BUFFER
(B-19) (B-4) Q134, 135 REC/PB SWITCH
(B-3) Q102 ERASE CURRENT SWITCH
(B-20) (A-20) Q101, 103 ERASE OSC
FE BLOCK
(B-20) Q104 SWITCH
Q116 (C-19)
Q118 (C-20)
PB.RF.EQ
BUFFER
(C-20) Q121, 124
PB RF PEAK
(C-3) (C-3) Q109, 114 BUFFER
(C-4) (B-20) Q125, 136 CUT-OFF FREQUENCY SWITCH
Q111 (C-5) FREQUENCY CHARACTER SWITCH
Q131 UN5111
Q131 CUT-OFF FREQ SW (C-20)
(C-4) (C-5) Q113, 115 REC.EQ
(STANDARD 8)
(Hi 8)
R109 47 (STANDARD 8) 33 (Hi 8)
R108 18 (STANDARD 8) 22 (Hi 8)
R114 8.2k (Hi 8) 4.7k (STANDARD 8)
R119 0 (Hi 8) 1.8k (STANDARD 8)
C102 39p (STANDARD 8) 6p (Hi 8)
09

·SIGNAL PATH

	VIDEO SIGNAL			AUDIO
	CHROMA	Y	Y/CHROMA	SIGNAL
REC	➡	➡》	➡》》	➡
PB	⇨	⇨》	⇨》》	⇨

·SIGNAL PATH

	REC	REC/PB	PB
Ref. signal	➡		⇨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(B-4) (B-19) Q133, 132 PB RF AMP
(C-18) Q105 MUTE SWITCH
(C-18) Q106 TIME CONSTANT SWITCH
(C-3) (C-3) Q109, 114 BUFFER
Q116 (C-19) PB.RF.EQ
Q118 (C-20) BUFFER
(C-20) Q121, 124 (B-4) PB RF PEAKING
(C-41 (B-20) Q125, 136 CUT-OFF FREQUENCY SWITCH
Q111 (C-5) FREQUENCY CHARACTER SWITCH
(B-5) (C-19) Q117, 112 SOFT LIMITER
IC102 CXA1704R (C-20) Q127 GAIN SWITCH
(C-19) Q129 SWITCH
Q131 CUT-OFF FREQ SW (C-20)
(C-4) (C-5) Q113, 115 REC.EQ
(C-5) Q119 BUFFER
(STANDARD 8)
(Hi8)
DOC TH LEVEL
AGC SLOW
PB RF (NORMAL)
RF SWP
PB MIX RF
VA PB MODE
V MUTE
DOP
RP PB MODE
RP 5V
RP GND
PB 4.9V
*L/E
PB C RF
REC AFM RF
DOC*JOG
SOFT LIM OUT (L)
REC C RF
REC ATF RF
RF AGC OUT
REC Y RF (E)
*SP/LP
VIDEO 4.9V
REC Y RF (L)
*ME/MP
ME/MP
FE ON
TO VS-126 BOARD (5/5) (See Page 4-42)
TO VS-126 BOARD (5/5) (See Page 4-42)
TO VS-126 BOARD (5/5) (See Page 4-42)

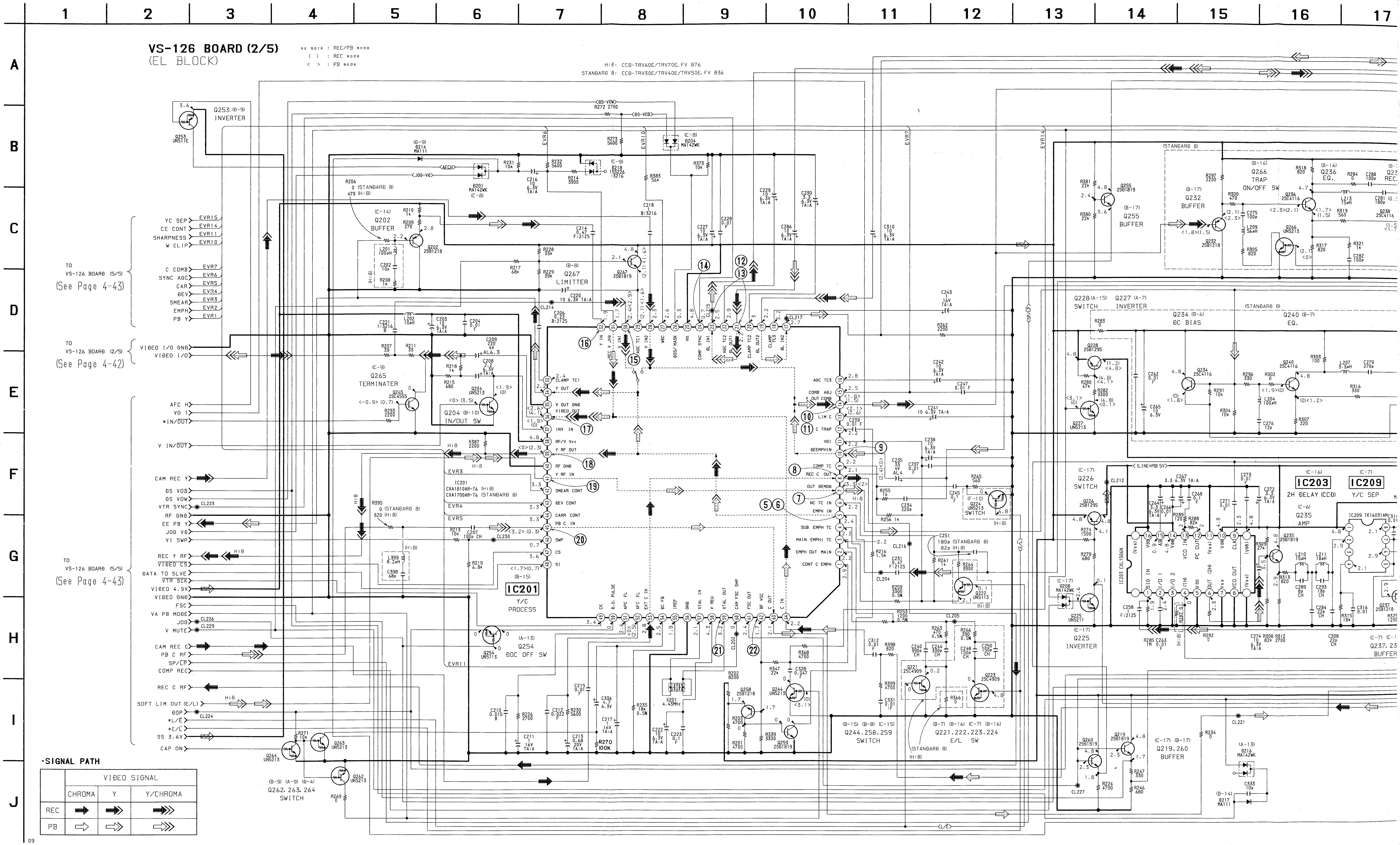
Hi8: CCD-TRV60E/TRV70E, FV 876
STANDARD 8: CCD-TRV30E/TRV40E/TRV50E, FV 836

·SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡»	➡»»	➡
PB	⇨	⇨»	⇨»»	⇨

·SIGNAL PATH

	REC	REC/PB	PB
Ref. signal	➡		⇨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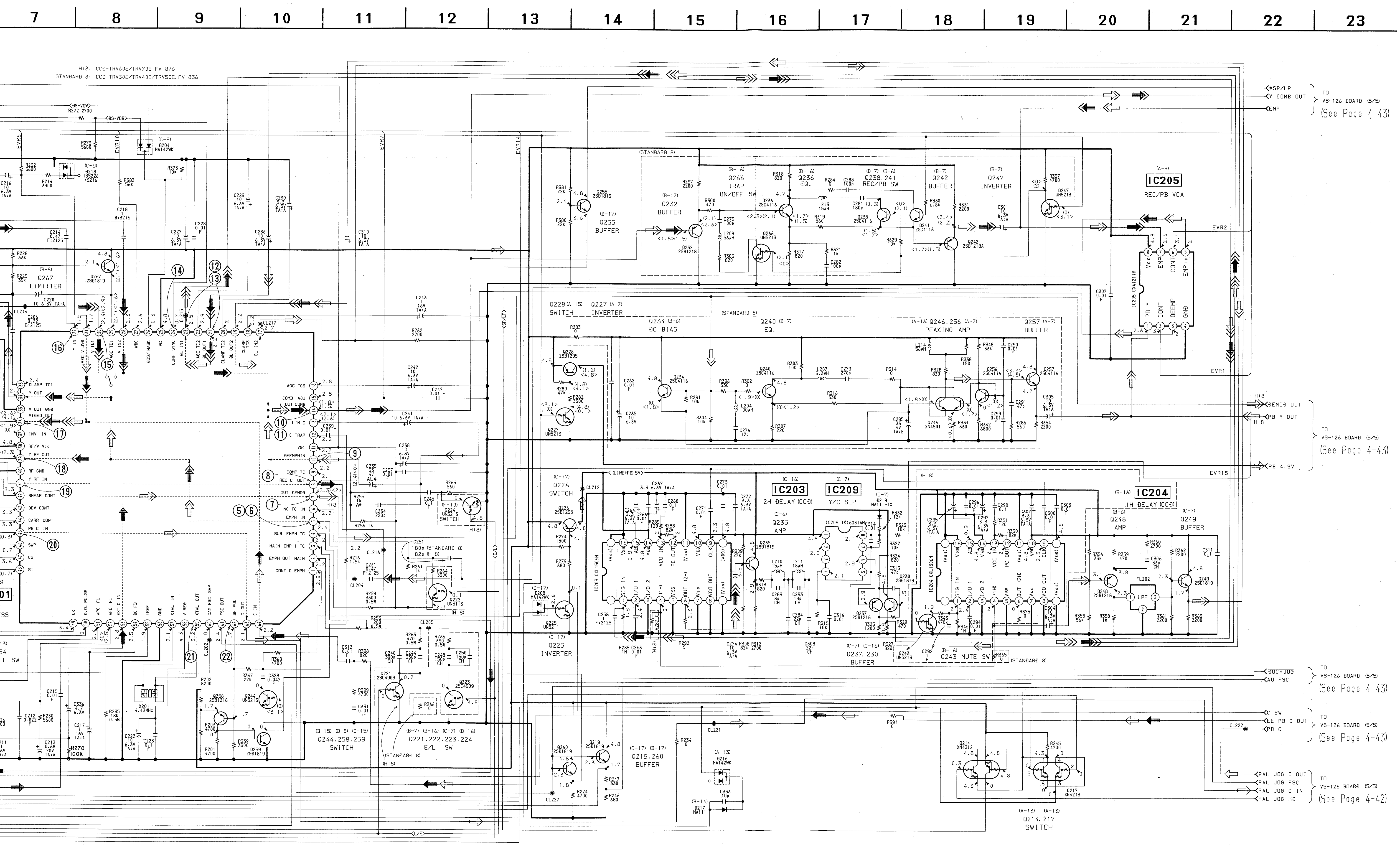
VS-126 BOARD (2/5)
(EL BLOCK)
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
Hi8: CCD-TRV60E/TRV70E, FV 876
STANDARD 8: CCD-TRV30E/TRV40E/TRV50E, FV 836
TO VS-126 BOARD (5/5) (See Page 4-43)
TO VS-126 BOARD (2/5) (See Page 4-42)
TO VS-126 BOARD (5/5) (See Page 4-43)
YC SEP
CE CONT
SHARPNESS
W CLIP
C COMB
SYNC AGC
CAR
DEV
SMEAR
EMPH
PB Y
VIDEO I/O GND
VIDEO I/O
AFC H
VG 1
*IN/OUT
V IN/OUT
CAM REC Y
DS VOB
DS VOW
VTR SYNC
RF GND
EE PB Y
JOG VD
VI SWP
REC Y RF
VIDEO CS
DATA TO SLVE
VTR SCK
VIDEO 4.9V
VIDEO GND
FSC
VA PB MODE
JOG
V MUTE
CAM REC C
PB C RF
SP/LP
COMP REC
REC C RF
SOFT LIM OUT (E/L)
BOP
*L/E
*E/C
SS 3.6V
CAP ON
Q253 (B-9) INVERTER
Q202 BUFFER
Q265 TERMINATER
Q204 (B-10) IN/OUT SW
Q267 LIMITTER
Q254 DOC OFF SW
Q262, 263, 264 SWITCH
IC201 Y/C PROCESS
IC201 CXA1810AR-T6 (Hi8) CXA1700AR-T6 (STANDARD 8)
Q244, 258, 259 SWITCH
Q221, 222, 223, 224 E/L SW
Q219, 260 BUFFER
Q225 INVERTER
Q226 SWITCH
Q228 SWITCH
Q227 INVERTER
Q234 DC BIAS
Q240 EQ.
Q232 BUFFER
Q255 BUFFER
Q266 TRAP ON/OFF SW
Q236 EQ.
IC203 2H DELAY (CCD)
IC209 Y/C SEP
Q235 AMP
Q237, 23 BUFFER
IC203 CXL1506N
X201 4.43MHz

·SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡➡	➡➡➡
PB	⇨	⇨⇨	⇨⇨⇨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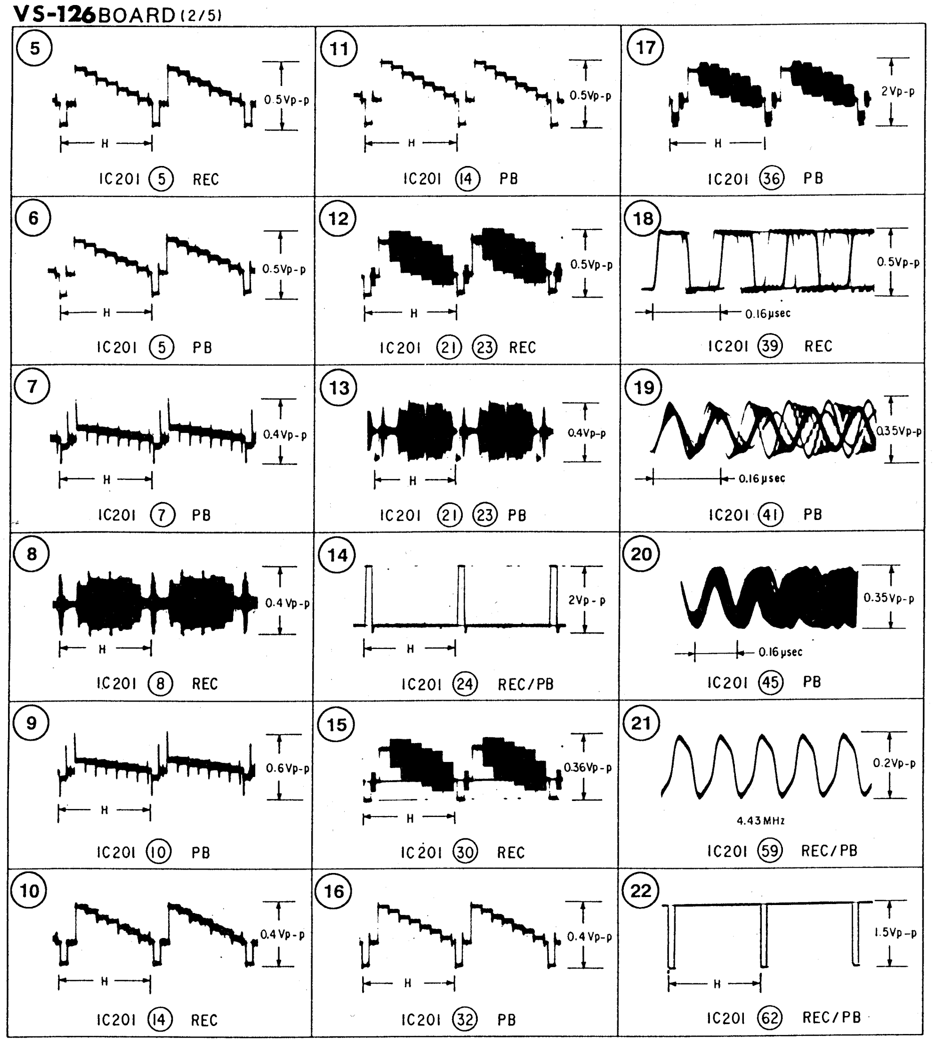
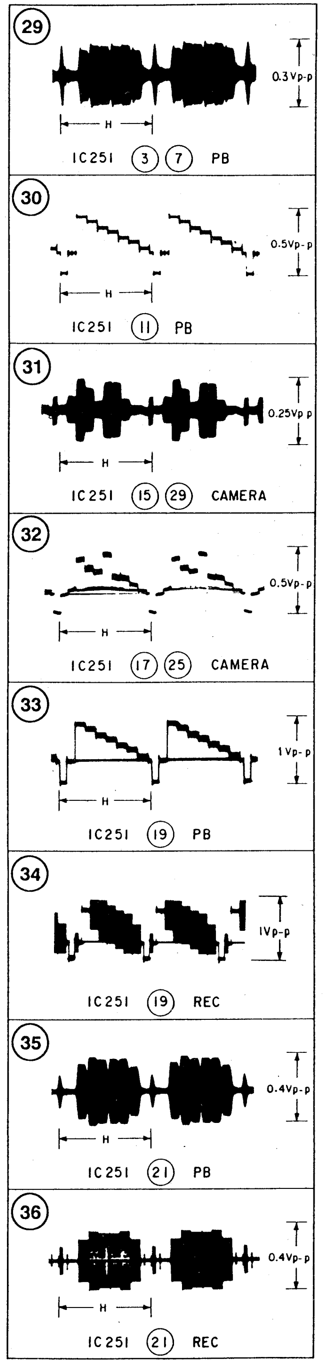
Hi8: CCD-TRV60E/TRV70E, FV 876
STANDARD 8: CCD-TRV30E/TRV40E/TRV50E, FV 836
(B-8) Q267 LIMITTER
(B-16) Q266 TRAP ON/OFF SW
(B-16) Q236 EQ.
(B-7) (B-6) Q238, 241 REC/PB SW
(B-7) Q242 BUFFER
(B-7) Q247 INVERTER
(A-8) IC205 REC/PB VCA
(B-17) Q232 BUFFER
(B-17) Q255 BUFFER
Q228 (A-15) SWITCH
Q227 (A-7) INVERTER
Q234 (B-6) DC BIAS
Q240 (B-7) EQ.
(A-16) Q246, 256 (A-7) PEAKING AMP
Q257 (A-7) BUFFER
(C-17) Q226 SWITCH
(C-17) Q225 INVERTER
(C-16) IC203 2H DELAY (CCD)
(C-7) IC209 Y/C SEP
(C-6) Q235 AMP
(B-16) IC204 1H DELAY (CCD)
(B-6) Q248 AMP
(C-7) Q249 BUFFER
(C-7) (C-16) Q237, 230 BUFFER
(B-16) Q243 MUTE SW
(B-15) (B-8) (C-15) Q244, 258, 259 SWITCH
(B-7) (B-16) (C-7) (B-16) Q221, 222, 223, 224 E/L SW
(C-17) (B-17) Q219, 260 BUFFER
(A-13) (A-13) Q214, 217 SWITCH
(F-10) Q224 UN5213 SWITCH
(STANDARD 8)
(Hi8)
SP/LP
Y COMB OUT
EMP
TO VS-126 BOARD (5/5) (See Page 4-43)
DEMOD OUT
PB Y OUT
PB 4.9V
TO VS-126 BOARD (5/5) (See Page 4-43)
DOC·JOG
AU FSC
TO VS-126 BOARD (5/5) (See Page 4-43)
C SW
EE PB C OUT
PB C
TO VS-126 BOARD (5/5) (See Page 4-43)
PAL JOG C OUT
PAL JOG FSC
PAL JOG C IN
PAL JOG HD
TO VS-126 BOARD (5/5) (See Page 4-42)
EVR1
EVR2
EVR15
IC205 CXA1211M
IC203 CXL1506N
IC204 CXL1506N
IC209 TK16031AM
X201 4.43MHz
FL202 LPF

VS-126 BOARD (2/5)

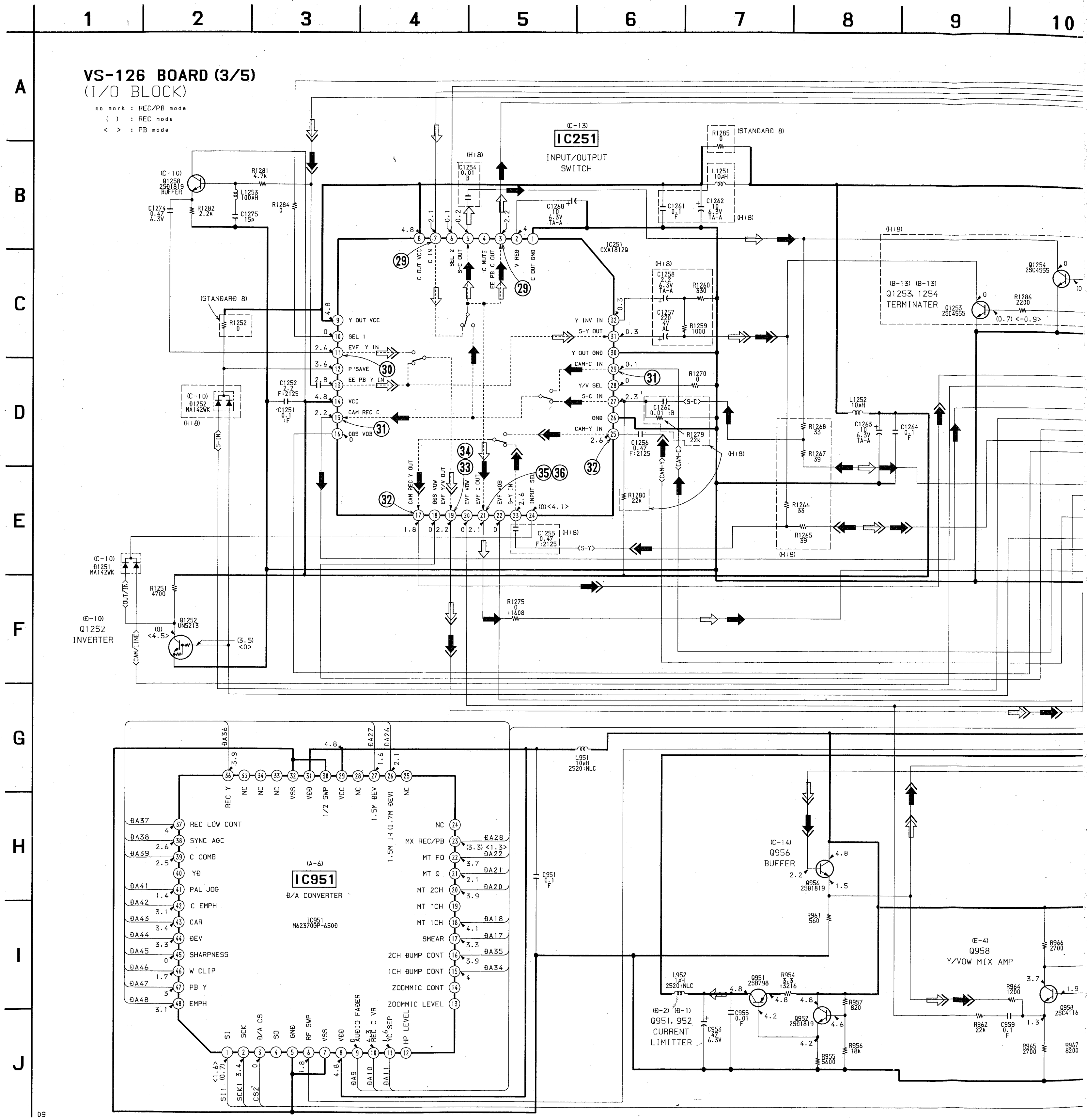


VS-126 BOARD (3/5)



VS-126 (Hi 8 I/O, ELECTRIC VOLUME) SCHEMATIC DIAGRAM

- Refer to page 4-24 for Printed Wiring Board.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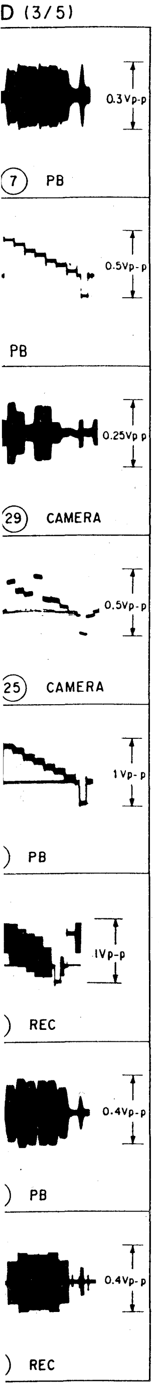
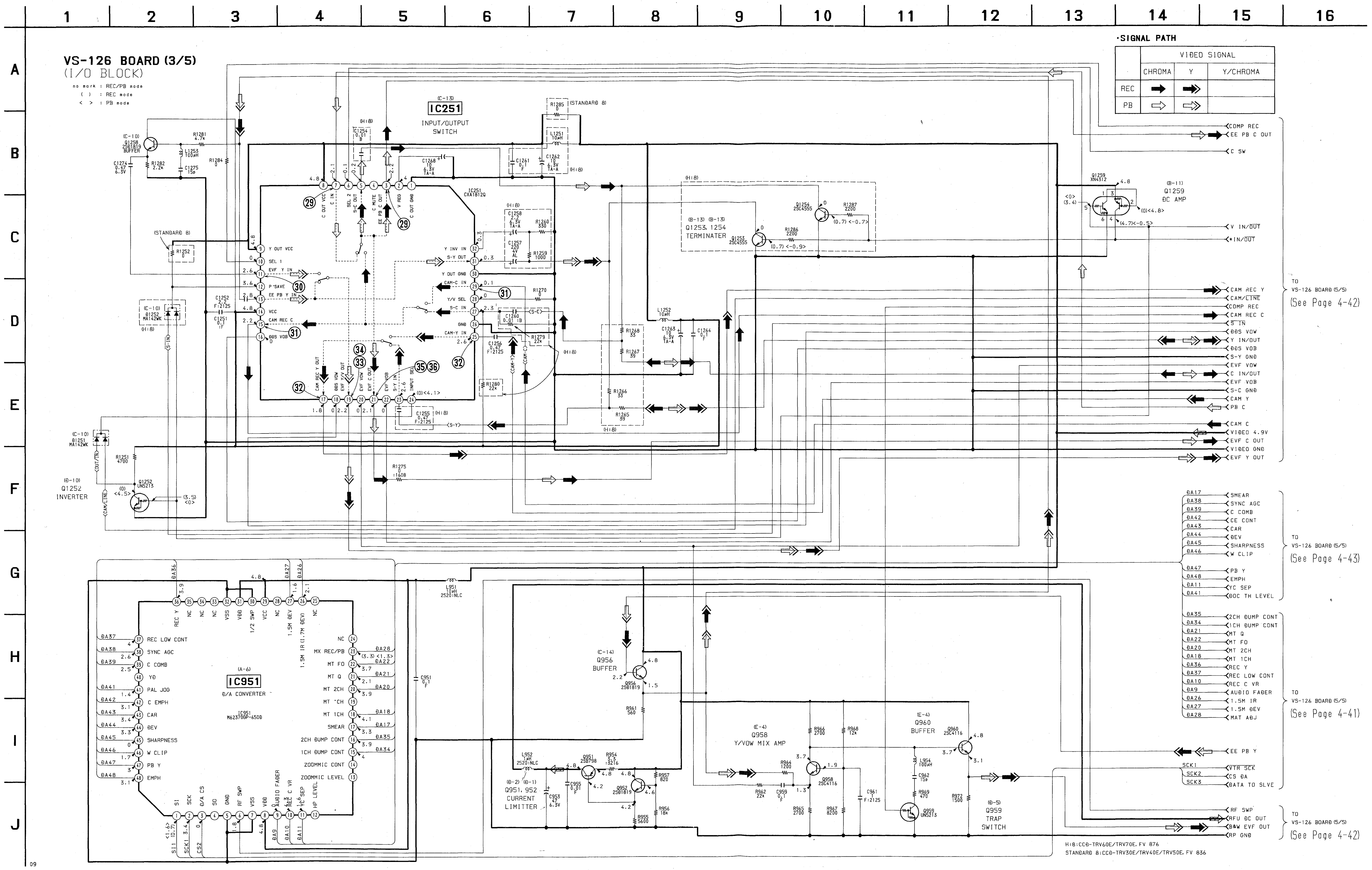
VS-126 BOARD (3/5)
(I/O BLOCK)
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
IC251
INPUT/OUTPUT SWITCH
IC251 CXA1812Q
Q1258 2SB1819 BUFFER
Q1252 UN5213
Q1252 INVERTER
D1251 MA142WK
D1252 MA142WK
(B-13) (B-13)
Q1253, 1254
TERMINATER
IC951
D/A CONVERTER
IC951 M62370OP-6500
Q956 BUFFER
Q956 2SB1819
(B-2) (B-1)
Q951, 952
CURRENT LIMITTER
Q958
Y/VOW MIX AMP
Q958 2SC4116
L951 10μH
C951 0.1
(STANDARD 8)
(Hi 8)
09

VS-126 (Hi8 I/O, ELECTRIC VOLUME) SCHEMATIC DIAGRAM

• Refer to page 4-24 for Printed Wiring Board.





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VS-126 BOARD (3/5)
(I/O BLOCK)
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
(C-13)
IC251
INPUT/OUTPUT
SWITCH
IC251
CXA1812Q
(C-10)
Q1258
2SD1819
BUFFER
R1281 4.7k
L1253 100µH
C1274 0.47 6.3V
R1282 2.2k
C1275 15p
R1284 0
(Hi8)
C1254 0.01 B
C1268 10 6.3V TA-A
R1285 0
(STANDARD 8)
L1251 10µH
C1261 0.1 F
C1262 10 6.3V TA-A
(STANDARD 8)
R1252 0
(C-10)
D1252
MA142WK
C1252 2.2 F:2125
C1251 0.1 F
C OUT VCC
C IN
SEL 2
S-C OUT
C MUTE
EE PB C OUT
V REG
C OUT GND
Y OUT VCC
SEL 1
EVF Y IN
P SAVE
EE PB Y IN
VCC
CAM REC C
DDS VOB
Y INV IN
S-Y OUT
Y OUT GND
CAM-C IN
Y/V SEL
S-C IN
GND
CAM-Y IN
CAM REC Y OUT
DDS VOW
EVF Y/V OUT
EVF VOW
EVF C OUT
EVF VOB
S-Y IN
INPUT SEL
C1258 2.2 6.3V TA-A
R1260 330
C1257 220 4V AL
R1259 1000
R1270 0
C1260 0.01 B
R1279 22k
C1256 0.47 F:2125
R1280 22k
C1255 0.47 F:2125
(C-10)
D1251
MA142WK
R1251 4700
(D-10)
Q1252
INVERTER
Q1252
UN5213
R1275 0 :1608
(B-13) (B-13)
Q1253, 1254
TERMINATER
Q1253 2SC4555
Q1254 2SC4555
R1287 2200
R1286 2200
L1252 10µH
C1263 10 6.3V TA-A
C1264 0.1 F
R1268 33
R1267 39
R1266 33
R1265 39
Q1259
XN4312
(B-11)
Q1259
DC AMP
L951 10µH 2520:NLC
(A-6)
IC951
D/A CONVERTER
IC951
M62370GP-650D
REC LOW CONT
SYNC AGC
C COMB
YD
PAL JOG
C EMPH
CAR
DEV
SHARPNESS
W CLIP
PB Y
EMPH
NC
MX REC/PB
MT FO
MT Q
MT 2CH
MT 1CH
SMEAR
2CH DUMP CONT
1CH DUMP CONT
ZOOMMIC CONT
ZOOMMIC LEVEL
REC Y
VSS
VDD
1/2 SWP
1.5M DEV
1.5M IR (1.7M DEV)
SI
SCK
D/A CS
SO
RF SWP
AUDIO FADER
REC C VR
YC SEP
HP LEVEL
C951 0.1 F
(C-14)
Q956
BUFFER
Q956 2SD1819
R961 560
(E-4)
Q958
Y/VOW MIX AMP
Q958 2SC4116
R966 2700
R968 12k
R964 1200
R962 22k
C959 0.1 F
R965 2700
R967 8200
C961 1 F:2125
(E-4)
Q960
BUFFER
Q960 2SC4116
L954 100µH
C962 15p
R969 470
R972 1500
(D-5)
Q959
TRAP
SWITCH
Q959 UN5213
L952 1µH 2520:NLC
Q951 2SB798
R954 3.3 :3216
Q952 2SD1819
R957 820
R955 5600
R956 18k
C955 0.01 F
C953 47 6.3V
(D-2) (D-1)
Q951, 952
CURRENT
LIMITTER
COMP REC
EE PB C OUT
C SW
V IN/OUT
*IN/OUT
CAM REC Y
CAM/LINE
COMP REC
CAM REC C
S IN
DDS VOW
Y IN/OUT
DDS VOB
S-Y GND
EVF VOW
C IN/OUT
EVF VOB
S-C GND
CAM Y
PB C
CAM C
VIDEO 4.9V
EVF C OUT
VIDEO GND
EVF Y OUT
TO
VS-126 BOARD (5/5)
(See Page 4-42)
DA17
DA38
DA39
DA42
DA43
DA44
DA45
DA46
DA47
DA48
DA11
DA41
SMEAR
SYNC AGC
C COMB
CE CONT
CAR
DEV
SHARPNESS
W CLIP
PB Y
EMPH
YC SEP
DOC TH LEVEL
TO
VS-126 BOARD (5/5)
(See Page 4-43)
DA35
DA34
DA21
DA22
DA20
DA18
DA36
DA37
DA10
DA9
DA26
DA27
DA28
2CH DUMP CONT
1CH DUMP CONT
MT Q
MT FO
MT 2CH
MT 1CH
REC Y
REC LOW CONT
REC C VR
AUDIO FADER
1.5M IR
1.5M DEV
MAT ADJ
EE PB Y
SCK1
SCK2
SCK3
VTR SCK
CS DA
DATA TO SLVE
TO
VS-126 BOARD (5/5)
(See Page 4-41)
RF SWP
RFU DC OUT
B&W EVF OUT
RP GND
TO
VS-126 BOARD (5/5)
(See Page 4-42)
09

•SIGNAL PATH

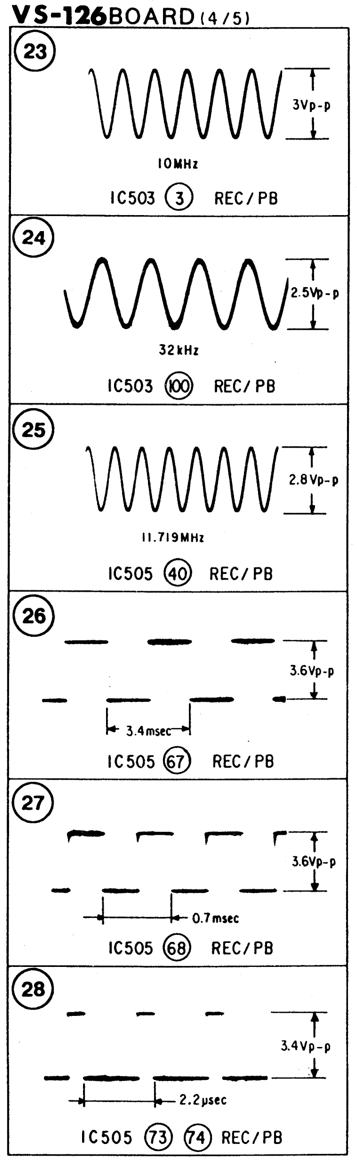
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡»	
PB	⇨	⇨»	

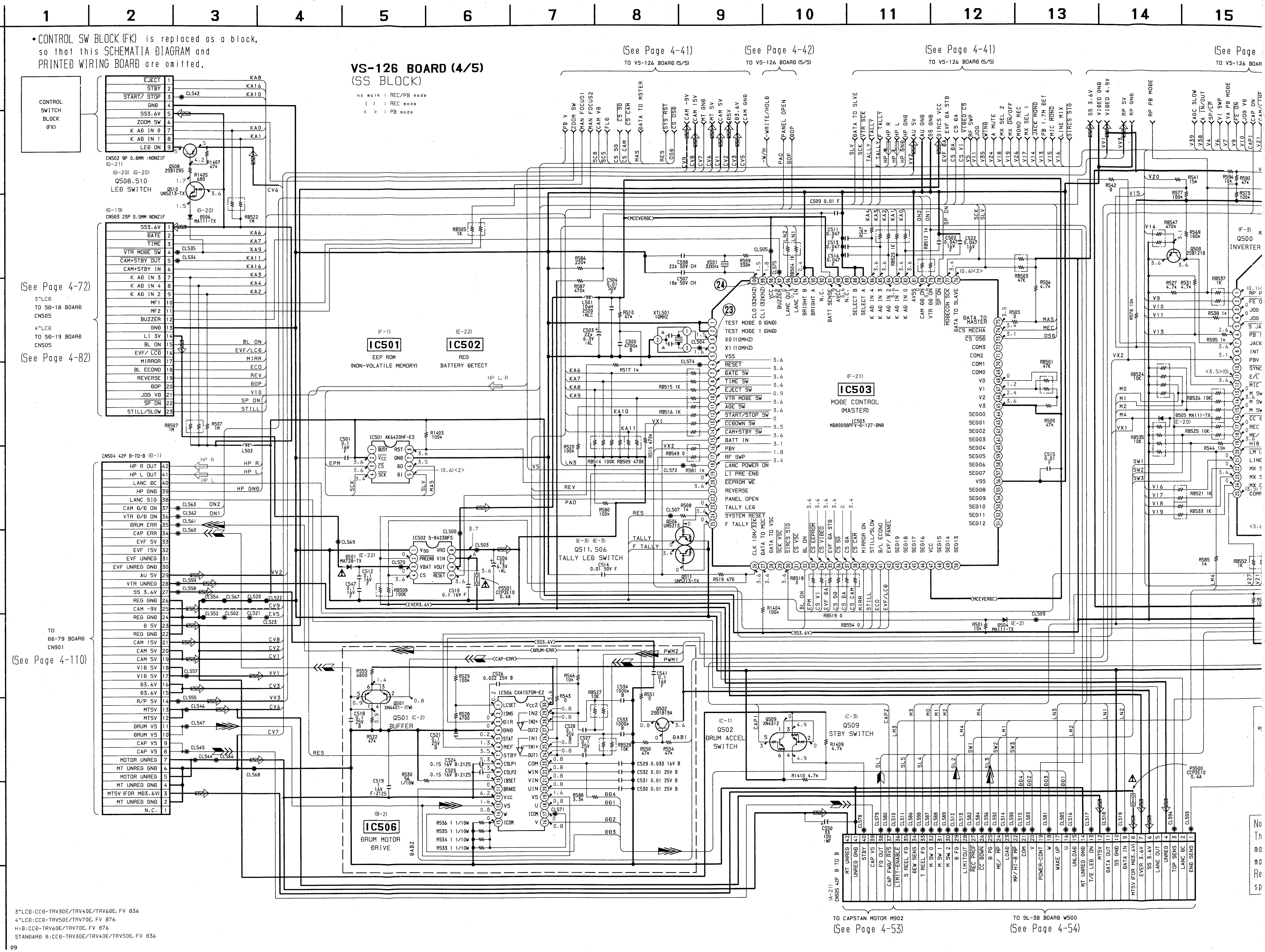
Hi8:CCD-TRV60E/TRV70E, FV 876
STANDARD 8:CCD-TRV30E/TRV40E/TRV50E, FV 836

VS-126 (SERVO/SYSTEM CONTROL) SCHEMATIC DIAGRAM

- Refer to page 4-24 for Printed Wiring Board.

VS-126 BOARD (4/5)





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K
• CONTROL SW BLOCK (FK) is replaced as a block, so that this SCHEMATIA DIAGRAM and PRINTED WIRING BOARD are omitted.
VS-126 BOARD (4/5)
(SS BLOCK)
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
CONTROL SWITCH BLOCK (FK)
(See Page 4-41) TO VS-126 BOARD (5/5)
(See Page 4-42) TO VS-126 BOARD (5/5)
(See Page 4-41) TO VS-126 BOARD (5/5)
(See Page 4-72)
3"LCD TO SD-18 BOARD CN505
4"LCD TO SD-19 BOARD CN505
(See Page 4-82)
TO DD-79 BOARD CN901
(See Page 4-110)
CN502 9P 0.8MM :NONZIF
CN503 23P 0.5MM NONZIF
CN504 42P B-TO-B
Q508, 510 LED SWITCH
IC501 EEP ROM (NON-VOLATILE MEMORY)
IC502 REG BATTERY DETECT
IC503 MODE CONTROL (MASTER)
IC503 MB89098PFV-G-127-BND
IC501 AK6420HF-E2
IC502 S-84230FS
Q511, 506 TALLY LED SWITCH
Q501 BUFFER
IC506 DRUM MOTOR DRIVE
IC506 CXA1575M-E2
Q502 DRUM ACCEL SWITCH
Q509 STBY SWITCH
Q500 INVERTER
CN505 42P B TO B
TO CAPSTAN MOTOR M902 (See Page 4-53)
TO SL-38 BOARD W500 (See Page 4-54)
3"LCD:CCD-TRV30E/TRV40E/TRV60E, FV 836
4"LCD:CCD-TRV50E/TRV70E, FV 876
Hi8:CCD-TRV60E/TRV70E, FV 876
STANDARD 8:CCD-TRV30E/TRV40E/TRV50E, FV 836

09

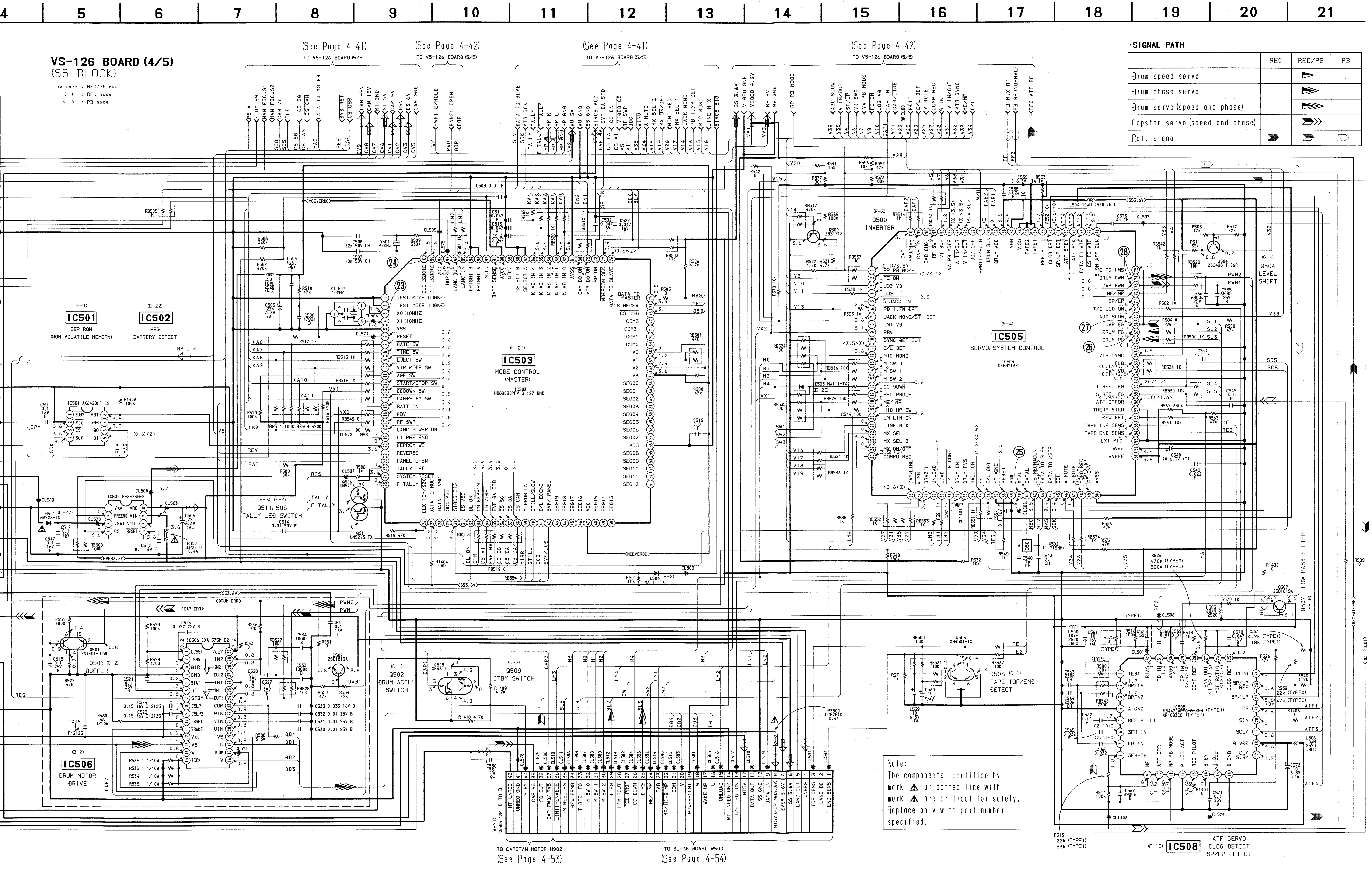
- Refer to page 4-24 for Printed Wiring Board.

VS-126 BOARD (4/5)
(SS BLOCK)

no mark : REC/PB mode
( ) : REC mode
< > : PB mode

·SIGNAL PATH

	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷▷	
Drum servo (speed and phase)		▷▷▷	
Capstan servo (speed and phase)		▷▷»	
Ref. signal	▶	▷	▷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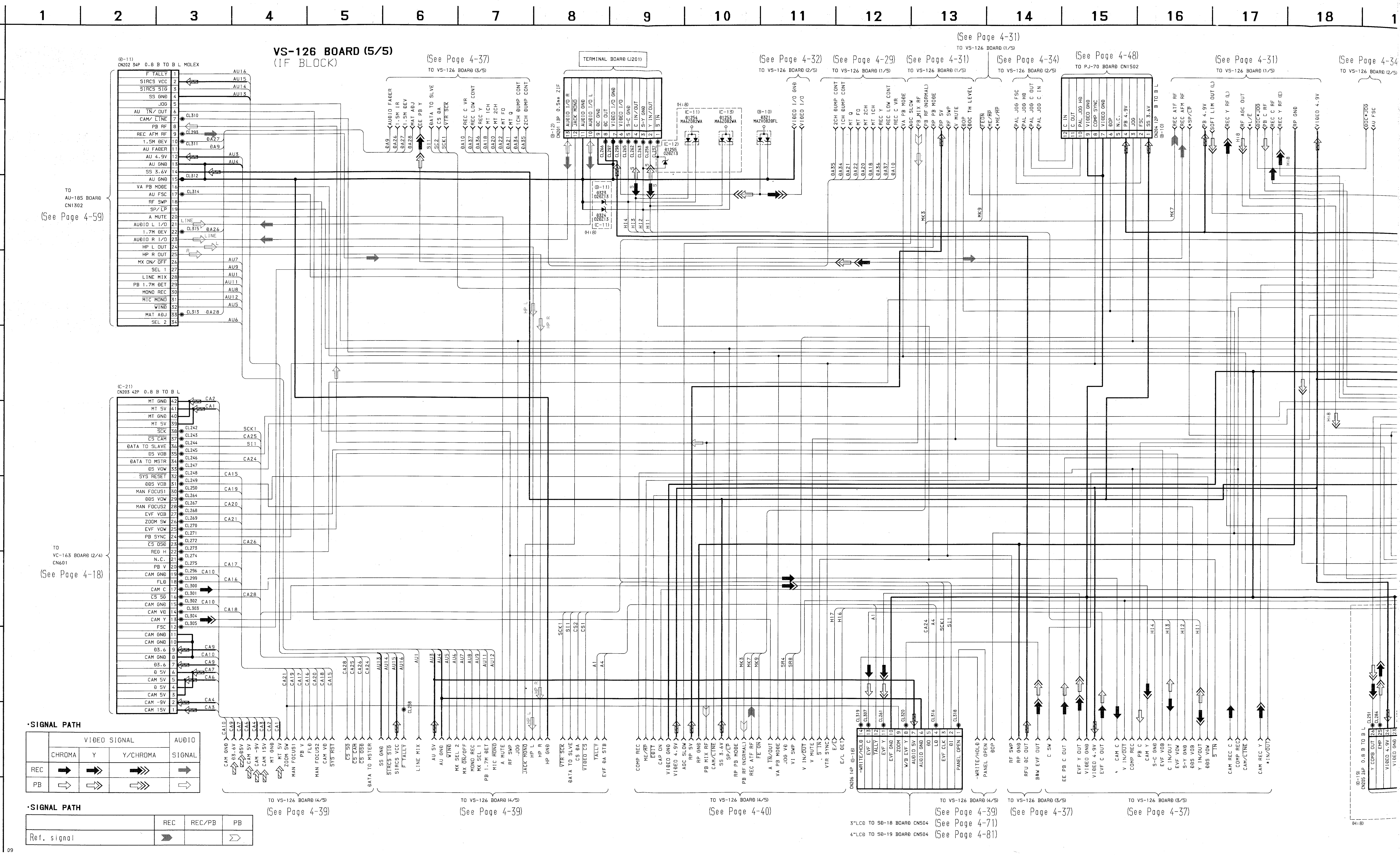
(See Page 4-41)
TO VS-126 BOARD (5/5)
(See Page 4-42)
TO VS-126 BOARD (5/5)
(See Page 4-41)
TO VS-126 BOARD (5/5)
(See Page 4-42)
TO VS-126 BOARD (5/5)
IC501
EEP ROM
(NON-VOLATILE MEMORY)
IC502
REG
BATTERY DETECT
IC503
MODE CONTROL
(MASTER)
IC505
SERVO, SYSTEM CONTROL
IC506
DRUM MOTOR
DRIVE
Q501
BUFFER
Q502
DRUM ACCEL
SWITCH
Q509
STBY SWITCH
Q503
TAPE TOP/END
DETECT
Q511, 506
TALLY LED SWITCH
Q500
INVERTER
Q504
LEVEL
SHIFT
LOW PASS FILTER
IC508
ATF SERVO
CLOG DETECT
SP/LP DETECT
TO CAPSTAN MOTOR M902
(See Page 4-53)
TO SL-38 BOARD W500
(See Page 4-54)

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

VS-126 (SIGNAL I/O) SCHEMATIC DIAGRAM

- Refer to page 4-24 for Printed Wiring Board.



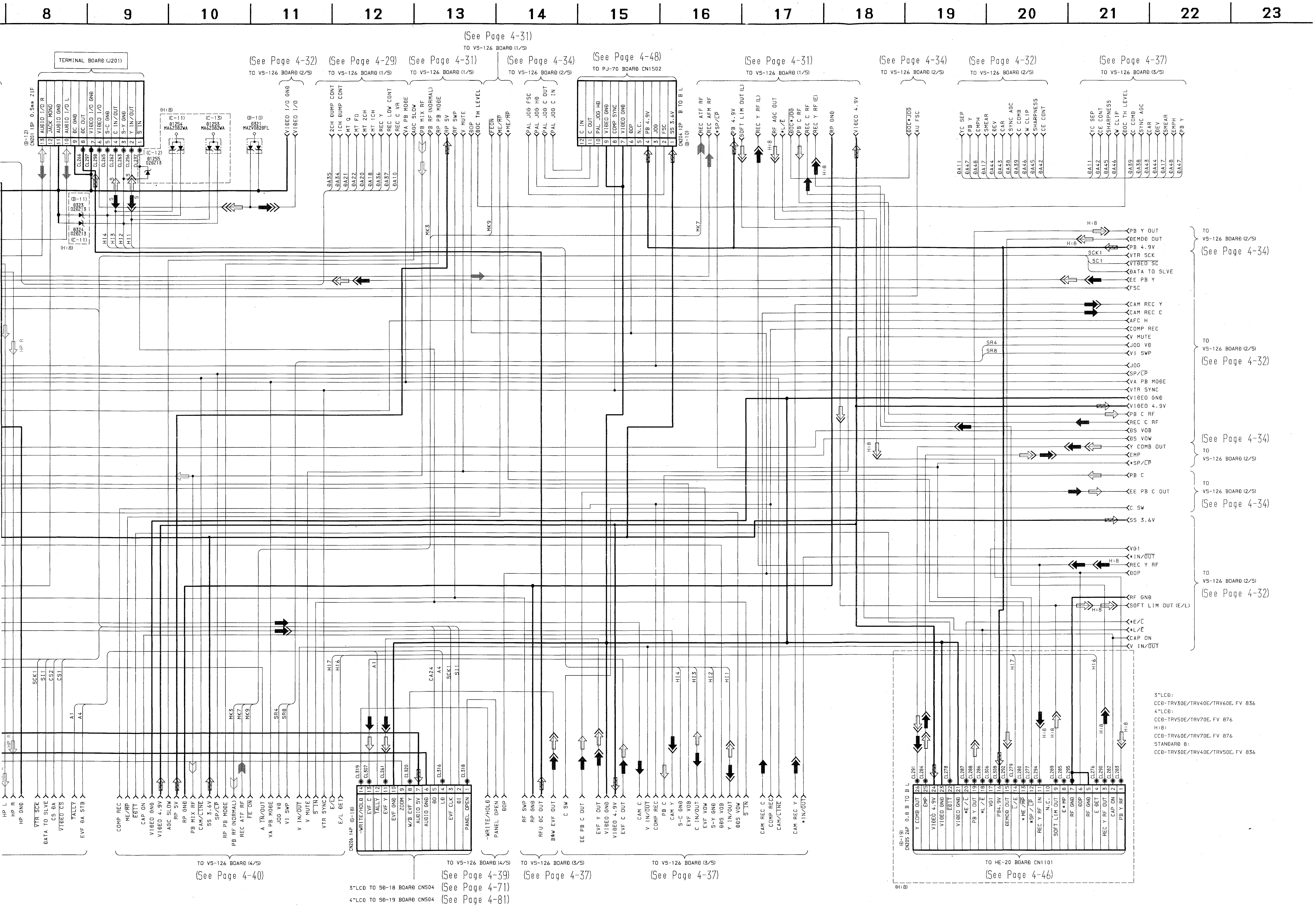
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
A B C D E F G H I J K
VS-126 BOARD (5/5)
(IF BLOCK)
(D-11) CN202 34P 0.8 B TO B L MOLEX
F TALLY
SIRCS VCC
SIRCS SIG
SS GND
JOG
AU IN/OUT
CAM/LINE
PB RF
REC AFM RF
1.5M DEV
AU FADER
AU 4.9V
AU GND
SS 3.6V
AU GND
VA PB MODE
AU FSC
RF SWP
SP/LP
A MUTE
AUDIO L I/O
1.7M DEV
AUDIO R I/O
HP L OUT
HP R OUT
MX ON/OFF
SEL 1
LINE MIX
PB 1.7M DET
MONO REC
MIC MONO
WIND
MAT ADJ
SEL 2
TO AU-185 BOARD CN1302
(See Page 4-59)
(C-21) CN203 42P 0.8 B TO B L
MT GND
MT 5V
MT GND
MT 5V
SCK
CS CAM
DATA TO SLAVE
DS VDD
DATA TO MSTR
DS VDW
SYS RESET
DDS VDD
MAN FOCUS1
DDS VDW
MAN FOCUS2
EVF VDD
ZOOM SW
EVF VDW
PB SYNC
CS DSD
REG H
N.C.
PB V
CAM GND
FLD
CAM C
CS SG
CAM GND
CAM VD
CAM Y
FSC
CAM GND
CAM GND
D3.6
CAM GND
D3.6
D 5V
CAM 5V
D 5V
CAM 5V
CAM -9V
CAM 15V
TO VC-163 BOARD (2/4) CN601
(See Page 4-18)
(See Page 4-37) TO VS-126 BOARD (3/5)
TERMINAL BOARD (J201)
(B-12) CN201 13P 0.5mm ZIF
(C-11) D1254 MA6Z082WA
(C-13) D1253 MA6Z082WA
(B-10) D321 MAZV0820FL
(C-12) D1255 02DZ13
(B-11) D323 02DZ13
D324 02DZ13
(See Page 4-32) TO VS-126 BOARD (2/5)
(See Page 4-29) TO VS-126 BOARD (1/5)
(See Page 4-31) TO VS-126 BOARD (1/5)
(See Page 4-34) TO VS-126 BOARD (2/5)
(See Page 4-48) TO PJ-70 BOARD CN1502
CN204 12P B TO B L
(See Page 4-31) TO VS-126 BOARD (1/5)
(See Page 4-34) TO VS-126 BOARD (2/5)
CN206 14P (G-18)
TO VS-126 BOARD (4/5) (See Page 4-39)
TO VS-126 BOARD (4/5) (See Page 4-39)
TO VS-126 BOARD (4/5) (See Page 4-40)
TO VS-126 BOARD (4/5) (See Page 4-39)
3"LCD TO SD-18 BOARD CN504 (See Page 4-71)
4"LCD TO SD-19 BOARD CN504 (See Page 4-81)
TO VS-126 BOARD (3/5) (See Page 4-37)
TO VS-126 BOARD (3/5) (See Page 4-37)
CN205 (B-19)

•SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	⇛	⇛	➡
PB	⇨	⇨	⇨	⇨

•SIGNAL PATH

	REC	REC/PB	PB
Ref. signal	➤		▷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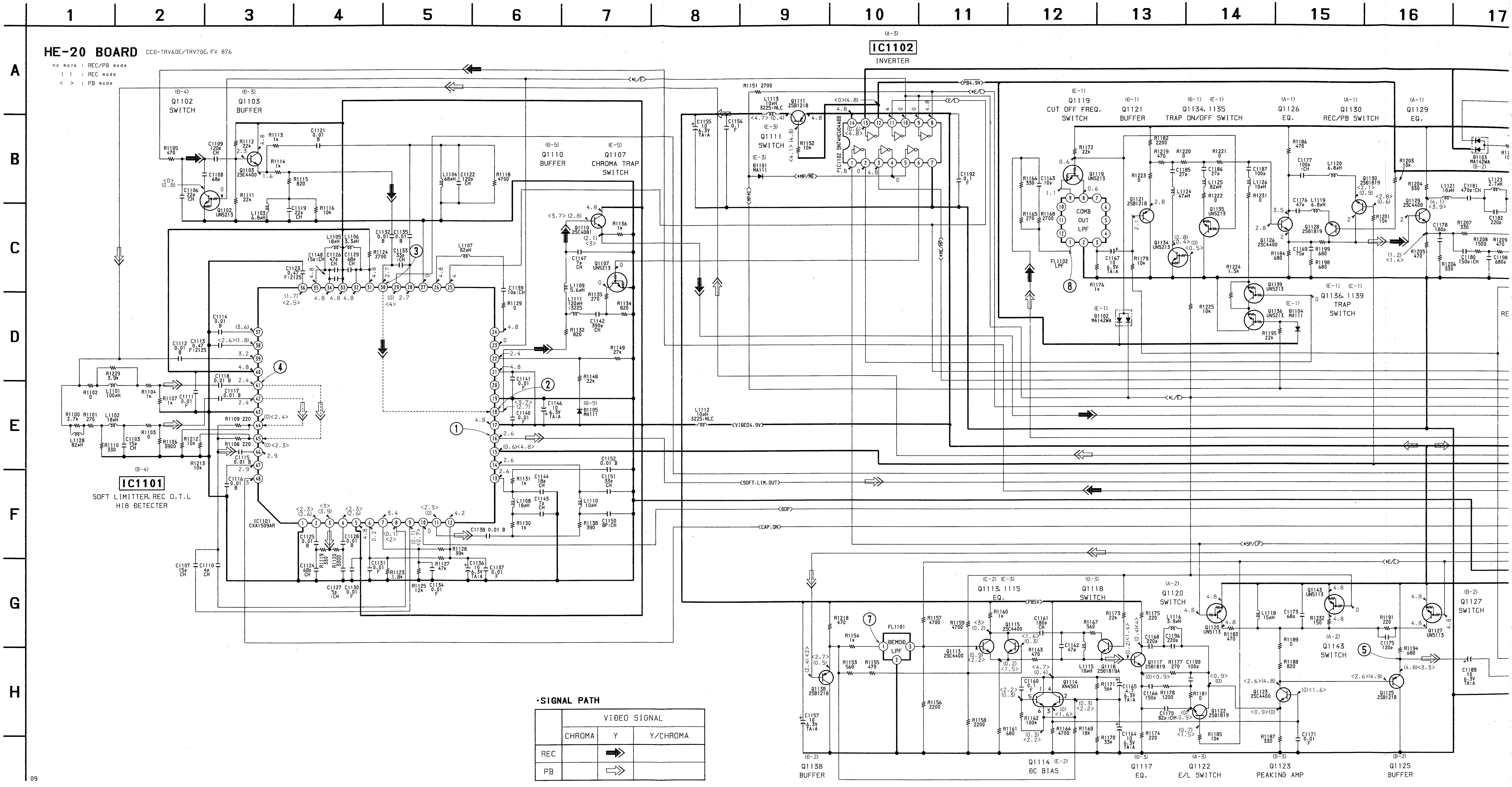
TERMINAL BOARD (J201)
CN201 13P 0.5mm ZIF
(B-12)
AUDIO I/O R
JACK MONO
AUDIO GND
AUDIO I/O L
DC GND
DC OUT
VIDEO I/O GND
VIDEO I/O
S-C GND
C IN/OUT
S-Y GND
Y IN/OUT
S IN
D1254 MA6Z082WA
D1253 MA6Z082WA
D321 MAZV0820FL
D323 02DZ13
D324 02DZ13
D1255 02DZ13
(See Page 4-32)
TO VS-126 BOARD (2/5)
VIDEO I/O GND
VIDEO I/O
(See Page 4-29)
TO VS-126 BOARD (1/5)
2CH BUMP CONT
1CH BUMP CONT
MT Q
MT FO
MT 2CH
MT 1CH
REC Y
REC LOW CONT
REC C VR
VA PB MODE
AGC SLOW
(See Page 4-31)
TO VS-126 BOARD (1/5)
PB MIX RF
PB RF (NORMAL)
RP PB MODE
RP SW
RF SWP
V MUTE
DOP
DOC TH LEVEL
FEON
ME/MP
(See Page 4-34)
TO VS-126 BOARD (2/5)
PAL JOG FSC
PAL JOG HD
PAL JOG C OUT
PAL JOG C IN
(See Page 4-48)
TO PJ-70 BOARD CN1502
C IN
C OUT
PAL JOG HD
VIDEO GND
COMP SYNC
VIDEO GND
DOP
N.C.
PB 4.9V
JOG
FSC
SS 3.6V
CN204 12P B TO B L
(B-10)
(See Page 4-31)
TO VS-126 BOARD (1/5)
REC ATF RF
REC AFM RF
SP/LP
PB 4.9V
SOFT LIM OUT (L)
REC Y RF (L)
RF AGC OUT
L/E
DOC JOG
PB C RF
REC C RF
REC Y RF (E)
RP GND
VIDEO 4.9V
(See Page 4-34)
TO VS-126 BOARD (2/5)
DOC JOG
4V FSC
(See Page 4-32)
TO VS-126 BOARD (2/5)
YC SEP
PB Y
EMPH
SMEAR
DEV
CAR
SYNC AGC
C COMB
W CLIP
SHARPNESS
CE CONT
(See Page 4-37)
TO VS-126 BOARD (3/5)
YC SEP
CE CONT
SHARPNESS
W CLIP
DOC TH LEVEL
C COMB
SYNC AGC
CAR
DEV
SMEAR
EMPH
PB Y
PB Y OUT
DEMOD OUT
PB 4.9V
VTR SCK
VIDEO SC
DATA TO SLVE
EE PB Y
FSC
TO VS-126 BOARD (2/5)
(See Page 4-34)
CAM REC Y
CAM REC C
AFC H
COMP REC
V MUTE
JOG VD
VI SWP
JOG
SP/LP
VA PB MODE
VTR SYNC
VIDEO GND
VIDEO 4.9V
PB C RF
REC C RF
BS VOB
BS VOW
Y COMB OUT
EMP
SP/LP
TO VS-126 BOARD (2/5)
(See Page 4-32)
(See Page 4-34)
TO VS-126 BOARD (2/5)
PB C
EE PB C OUT
C SW
TO VS-126 BOARD (2/5)
(See Page 4-34)
SS 3.6V
VG1
IN/OUT
REC Y RF
DOP
RF GND
SOFT LIM OUT (E/L)
E/C
L/E
CAP ON
V IN/OUT
TO VS-126 BOARD (2/5)
(See Page 4-32)
HP L
HP R
HP GND
VTR SCK
DATA TO SLVE
CS DA
VIDEO CS
TALLY
EVF DA STB
COMP REC
ME/MP
EDIT
CAP ON
VIDEO GND
VIDEO 4.9V
AGC SLOW
RP 5V
RP GND
PB MIX RF
CAM/CTRL
SS 3.6V
SP/LP
RP PB MODE
PB RF (NORMAL)
REC ATF RF
FE ON
A TR/OUT
VA PB MODE
JOG VD
VI SWP
V IN/OUT
V MUTE
S IN
VTR SYNC
E/L
E/L DET
TO VS-126 BOARD (4/5)
(See Page 4-40)
CN206 14P (B-18)
WRITE/HOLD
EVF C
TALLY
EVF Y
EVF GND
ZOOM
W/B EVF 5V
AUDIO 5V
AUDIO GND
DO
LD
EVF CLK
DI
PANEL OPEN
WRITE/HOLD
PANEL OPEN
DOP
TO VS-126 BOARD (4/5)
(See Page 4-39)
3"LCD TO SB-18 BOARD CN504 (See Page 4-71)
4"LCD TO SB-19 BOARD CN504 (See Page 4-81)
RF SWP
RP GND
RFU DC OUT
B&W EVF OUT
TO VS-126 BOARD (3/5)
(See Page 4-37)
C SW
EE PB C OUT
EVF Y OUT
VIDEO GND
VIDEO 4.9V
EVF C OUT
CAM C
Y IN/OUT
COMP REC
PB C
CAM Y
S-C GND
EVF VOB
C IN/OUT
EVF VOW
S-Y GND
BBS VOB
Y IN/OUT
BBS VOW
S IN
CAM REC C
COMP REC
CAM/CTRL
CAM REC Y
IN/OUT
TO VS-126 BOARD (3/5)
(See Page 4-37)
CN205 26P 0.8 B TO B L
(B-19)
Y COMB OUT
EMP
VIDEO 4.9V
VIDEO GND
EDIT
VIDEO GND
E/C
PB Y OUT
L/E
VG1
PB4.9V
DEMOD OUT
L/E
ME/MP
SP/LP
REC Y RF IN
N.C.
SOFT LIM OUT
E/MP
RF GND
DOP
RF GND
E DET
REC Y RF OUT
CAP ON
PB Y RF
TO HE-20 BOARD CN1101
(See Page 4-46)
(Hi8)
3"LCD:
CCD-TRV30E/TRV40E/TRV60E, FV 836
4"LCD:
CCD-TRV50E/TRV70E, FV 876
Hi8:
CCD-TRV60E/TRV70E, FV 876
STANDARD 8:
CCD-TRV30E/TRV40E/TRV50E, FV 836

HE-20 (Hi 8 VIDEO) SCHEMATIC DIAGRAM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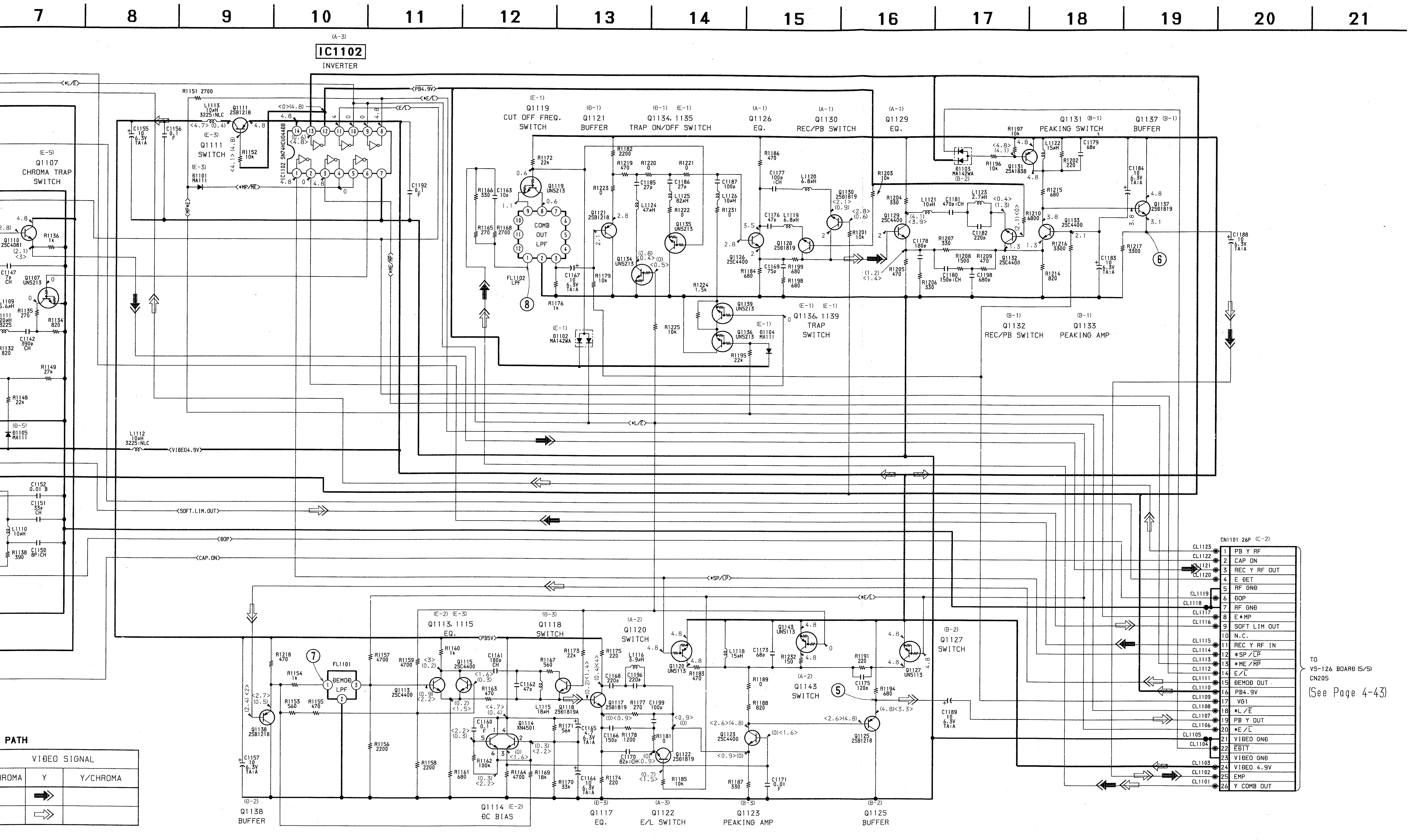
HE-20 BOARD CCD-TRV60E/TRV70E, FV 876
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
(B-4) Q1102 SWITCH
(B-3) Q1103 BUFFER
(B-5) Q1110 BUFFER
(E-5) Q1107 CHROMA TRAP SWITCH
(A-3) IC1102 INVERTER
(E-3) Q1111 SWITCH
(E-1) Q1119 CUT OFF FREQ. SWITCH
(B-1) Q1121 BUFFER
(B-1) (E-1) Q1134, 1135 TRAP ON/OFF SWITCH
(A-1) Q1126 EQ.
(A-1) Q1130 REC/PB SWITCH
(A-1) Q1129 EQ.
COMB OUT LPF
FL1102 LPF
(E-1) Q1136, 1139 TRAP SWITCH
(B-4) IC1101 SOFT LIMITTER, REC O.T.L HI8 DETECTER
IC1101 CXA1509AR
(E-2) (E-3) Q1113, 1115 EQ.
(B-3) Q1118 SWITCH
(A-2) Q1120 SWITCH
(B-2) Q1127 SWITCH
(A-2) Q1143 SWITCH
FL1101 DEMOD LPF
(B-2) Q1138 BUFFER
Q1114 (E-2) DC BIAS
(B-3) Q1117 EQ.
(A-3) Q1122 E/L SWITCH
(B-3) Q1123 PEAKING AMP
(B-2) Q1125 BUFFER
<*L/E>
<PB4.9V>
<*E/L>
<*MP/ME>
<VIDEO4.9V>
<SOFT.LIM.OUT>
<DOP>
<CAP.ON>
<*SP/LP>
<PB5V>
09

·SIGNAL PATH

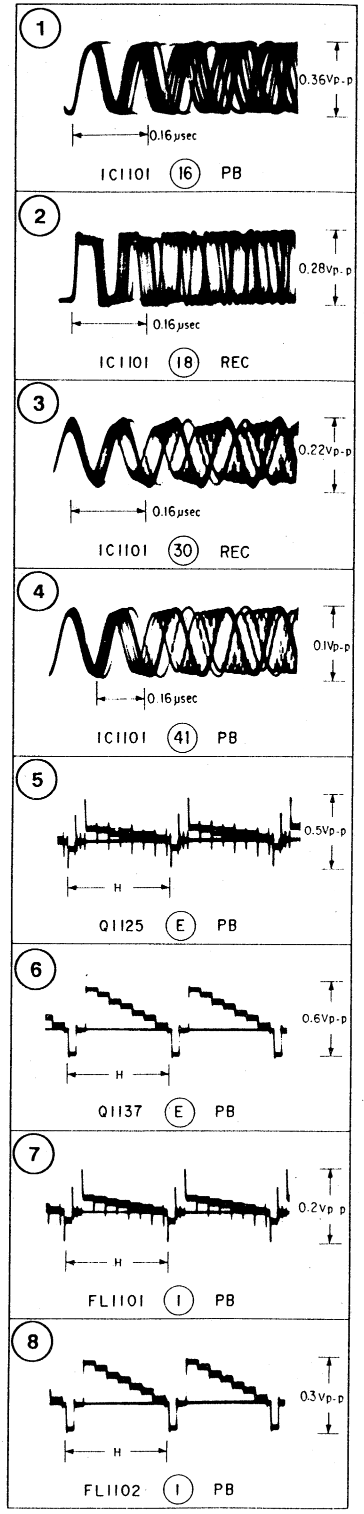
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC		➡	
PB		⇨	


7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
IC1102
INVERTER
Q1107
CHROMA TRAP
SWITCH
Q1111
SWITCH
Q1119
CUT OFF FREQ.
SWITCH
Q1121
BUFFER
Q1134, 1135
TRAP ON/OFF SWITCH
Q1126
EQ.
Q1130
REC/PB SWITCH
Q1129
EQ.
Q1131
PEAKING SWITCH
Q1137
BUFFER
COMB
OUT
LPF
FL1102
Q1136, 1139
TRAP
SWITCH
Q1132
REC/PB SWITCH
Q1133
PEAKING AMP
<PB4.9V>
<VIDEO4.9V>
<SOFT.LIM.OUT>
<DOP>
<CAP.ON>
<*SP/LP>
<*E/L>
<*L/E>
<*ME/MP>
<*MP/ME>
Q1113, 1115
EQ.
Q1118
SWITCH
Q1120
SWITCH
Q1143
SWITCH
Q1127
SWITCH
FL1101
DEMOD
LPF
Q1138
BUFFER
Q1114
DC BIAS
Q1117
EQ.
Q1122
E/L SWITCH
Q1123
PEAKING AMP
Q1125
BUFFER
CN1101 26P
1 PB Y RF
2 CAP ON
3 REC Y RF OUT
4 E DET
5 RF GND
6 DOP
7 RF GND
8 E*MP
9 SOFT LIM OUT
10 N.C.
11 REC Y RF IN
12 *SP/LP
13 *ME/MP
14 E/L
15 DEMOD OUT
16 PB4.9V
17 VG1
18 *L/E
19 PB Y OUT
20 *E/L
21 VIDEO GND
22 EDIT
23 VIDEO GND
24 VIDEO 4.9V
25 EMP
26 Y COMB OUT
TO
VS-126 BOARD (S/S)
CN205
(See Page 4-43)

PATH

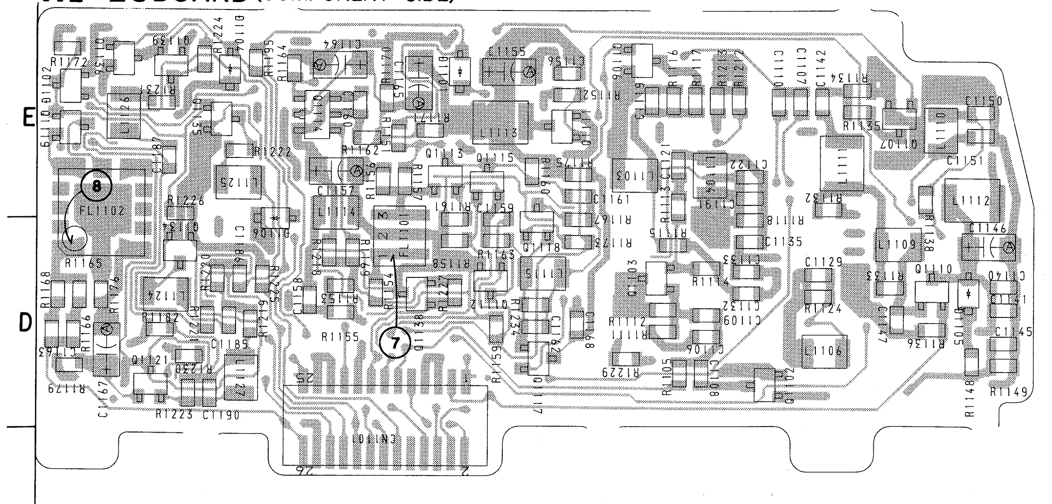
ROMA	VIDEO SIGNAL Y	Y/CHROMA
	➡	
	⇨	

HE-20 BOARD

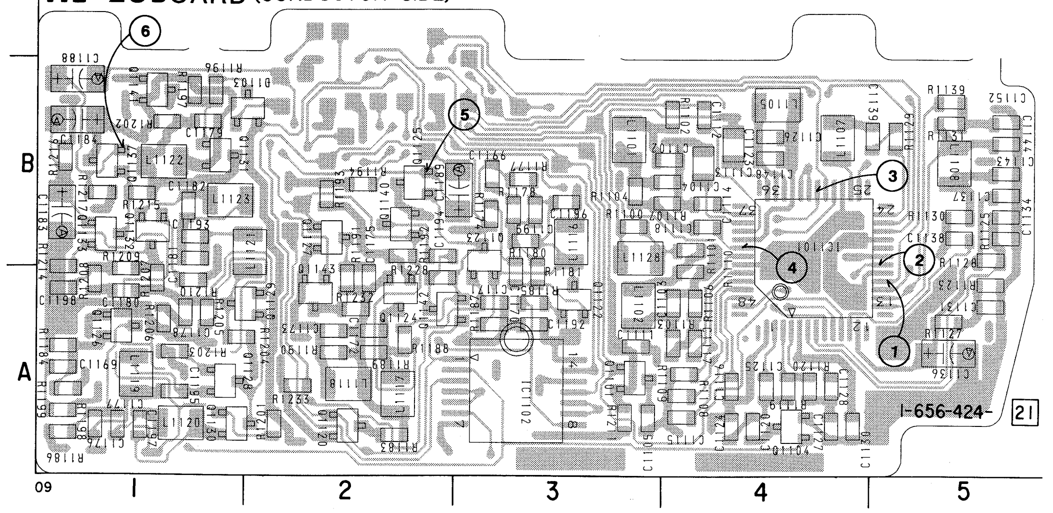


HE-20 (Hi8 VIDEO) PRINTED WIRING BOARD

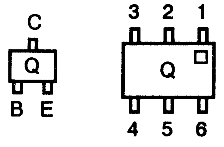
HE-20BOARD (COMPONENT SIDE)


E
D
C
⑧
FL1102
⑦
R1155
R1165
R1223 C1190

HE-20BOARD (CONDUCTOR SIDE)


B
A
⑥
⑤
③
④
②
①
IC1102
1-656-424- 21
09
1
2
3
4
5

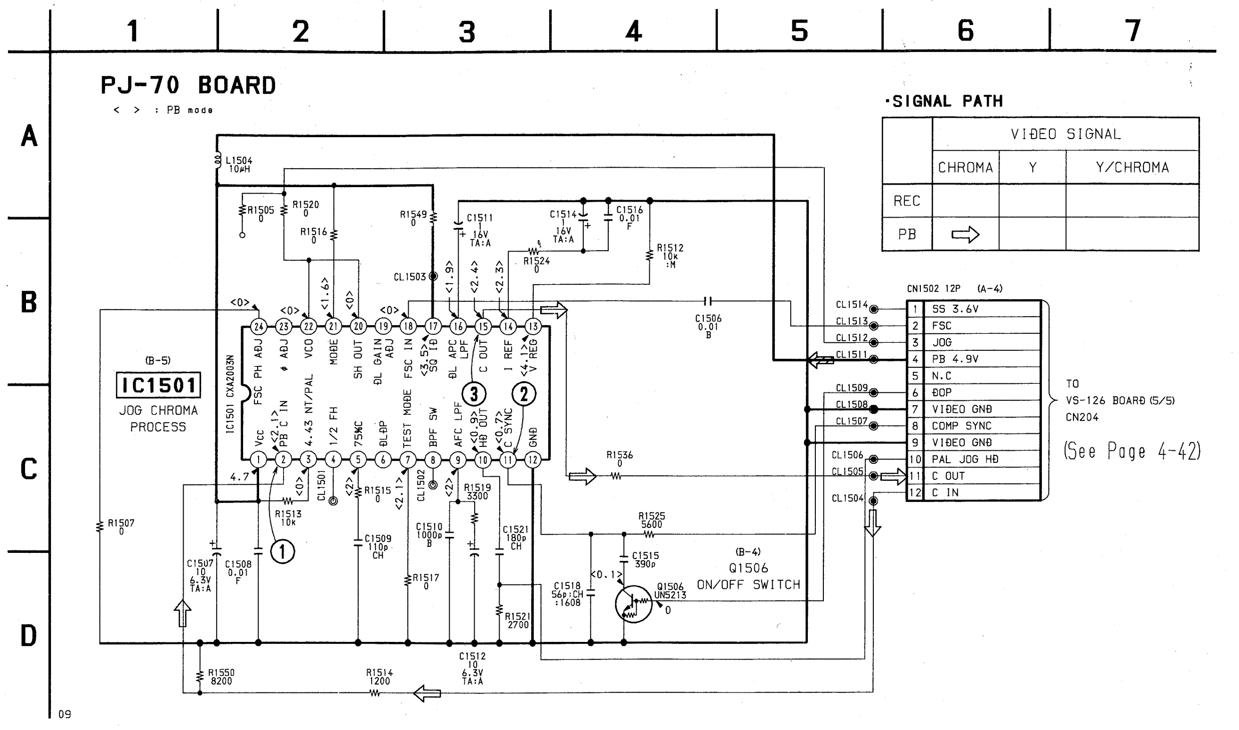
- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor


C
Q
B E
3 2 1
Q
4 5 6

HE-20 BOARD

C1103	A-4
C1106	D-4
C1107	E-4
C1108	D-4
C1109	D-4
C1110	E-4
C1111	A-3
C1112	B-4
C1113	B-4
C1114	B-4
C1115	A-4
C1116	A-4
C1117	A-4
C1118	B-4
C1119	E-3
C1121	E-4
C1122	E-4
C1123	B-4
C1124	A-4
C1125	A-4
C1126	B-4
C1127	A-4
C1128	A-4
C1129	D-4
C1130	A-4
C1131	A-5
C1132	D-4
C1133	D-4
C1134	B-5
C1135	D-4
C1136	A-5
C1137	B-5
C1138	B-5
C1139	B-4
C1140	D-5
C1141	D-5
C1142	E-4
C1143	B-5
C1144	B-5
C1146	D-5
C1147	D-5
C1148	B-4
C1151	E-5
C1152	B-5
C1155	E-3
C1156	E-3
C1157	E-2
C1160	E-2
C1161	E-3
C1162	D-3
C1163	D-1
C1164	E-2
C1165	E-2
C1166	B-3
C1167	D-1
C1168	D-3
C1169	A-1
C1170	A-3
C1171	A-3
C1173	A-2
C1175	A-2
C1176	A-1
C1177	A-1
C1178	A-1
C1179	B-1
C1180	A-1
C1181	B-1
C1182	B-1
C1183	B-1
C1184	B-1
C1185	D-1
C1186	D-1
C1187	E-1
C1188	B-1
C1189	B-3
C1192	A-3
C1196	B-3
C1198	A-1
C1199	B-3
CN1101	C-2
D1101	E-3
D1102	E-1
D1103	B-2
D1104	E-1
D1105	D-5
FL1101	D-2
FL1102	E-1
IC1101	B-4
IC1102	A-3
L1101	B-3
L1102	A-3
L1103	E-3
L1104	E-4
L1105	B-4
L1106	D-4
L1107	B-4
L1108	B-5
L1109	D-5
L1110	E-5
L1111	E-4
L1112	E-5
L1113	E-3
L1115	D-3
L1116	B-3
L1118	A-2
L1119	A-1
L1120	A-1
L1121	B-2
L1122	B-1
L1123	B-1
L1124	D-1
L1125	E-1
L1126	E-1
L1128	B-3
Q1102	D-4
Q1103	D-3
Q1107	E-5
Q1110	D-5
Q1111	E-3
Q1113	E-2
Q1114	E-2
Q1115	E-3
Q1117	D-3
Q1118	D-3
Q1119	E-1
Q1120	A-2
Q1121	D-1
Q1122	A-3
Q1123	B-3
Q1125	B-2
Q1126	A-1
Q1127	B-2
Q1128	A-1
Q1129	A-1
Q1130	A-1
Q1131	B-1
Q1132	B-1
Q1133	B-1
Q1134	D-1
Q1135	E-1
Q1136	E-1
Q1137	B-1
Q1138	D-2
Q1139	E-1
Q1143	A-2
R1100	B-3
R1101	B-4
R1102	B-4
R1103	A-4
R1104	B-3
R1105	D-4
R1106	A-4
R1107	B-4
R1108	A-4
R1109	A-4
R1110	A-4
R1111	D-3
R1112	D-3
R1113	E-4
R1114	D-4
R1115	D-4
R1116	E-4
R1118	E-4
R1119	A-4
R1120	A-4
R1123	A-5
R1124	D-4
R1125	B-5
R1127	A-5
R1128	B-5
R1129	B-5
R1130	B-5
R1131	B-5
R1132	E-4
R1134	E-4
R1135	E-4
R1136	D-5
R1138	E-5
R1148	D-5
R1149	D-5
R1151	E-2
R1152	E-3
R1153	D-2
R1154	D-2
R1155	D-2
R1156	E-2
R1157	E-2
R1158	D-2
R1159	D-3
R1160	E-3
R1161	E-2
R1162	E-2
R1163	D-3
R1164	E-2
R1165	D-1
R1166	D-1
R1167	E-3
R1168	D-1
R1169	D-2
R1170	E-2
R1171	E-2
R1172	E-1
R1173	D-3
R1174	B-3
R1175	E-3
R1176	D-1
R1177	B-3
R1178	B-3
R1179	D-1
R1181	A-3
R1182	D-1
R1183	A-2
R1184	A-1
R1185	A-3
R1186	A-1
R1187	A-3
R1188	A-2
R1189	A-2
R1191	A-2
R1194	B-2
R1195	E-2
R1196	B-1
R1197	B-1
R1198	A-1
R1199	A-1
R1201	A-2
R1202	B-1
R1203	A-1
R1204	A-1
R1205	A-1
R1206	A-1
R1207	A-1
R1208	A-1
R1209	A-1
R1210	A-1
R1212	E-4
R1213	E-4
R1214	A-1
R1215	B-1
R1216	B-1
R1217	B-1
R1218	D-2
R1219	D-2
R1220	D-1
R1221	D-1
R1222	E-1
R1223	D-1
R1224	E-1
R1225	D-2
R1229	D-3
R1231	E-1
R1232	A-2

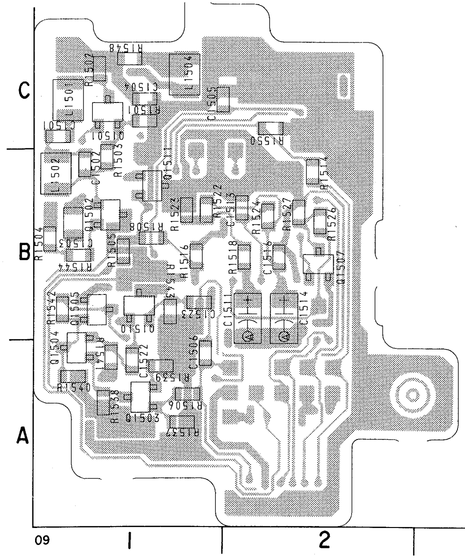
PJ-70 (PAL JOG) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
A
B
C
D
PJ-70 BOARD
< > : PB mode
(B-5)
IC1501
JOG CHROMA PROCESS
IC1501 CXA2003N
FSC PH ADJ
ϕ ADJ
VCO
MODE
SH OUT
DL GAIN ADJ
FSC IN
<3.5> SQ ID
DL APC LPF
C OUT
I REF
<4.1> V REG
Vcc
<2.1> PB C IN
4.43 NT/PAL
1/2 FH
75%C
DLDP
TEST MODE
BPF SW
AFC LPF
<0.9> HD OUT
<0.7> C SYNC
GND
L1504 10μH
R1505 0
R1520 0
R1516 0
R1549 0
CL1503
C1511 1 16V TA:A
C1514 1 16V TA:A
C1516 0.01 F
R1524 0
R1512 10k 1M
C1506 0.01 B
R1507 0
R1513 10k
CL1501
R1515 0
CL1502
R1519 3300
C1507 10 6.3V TA:A
C1508 0.01 F
C1509 110p CH
C1510 1000p B
C1521 180p CH
C1518 56p:CH :1608
R1517 0
R1521 2700
R1536 0
R1525 5600
C1515 390p
(B-4) Q1506 ON/OFF SWITCH
Q1506 UN5213
C1512 10 6.3V TA:A
R1550 8200
R1514 1200
·SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
REC
PB
CN1502 12P (A-4)
CL1514
CL1513
CL1512
CL1511
CL1509
CL1508
CL1507
CL1506
CL1505
CL1504
1 SS 3.6V
2 FSC
3 JOG
4 PB 4.9V
5 N.C
6 DOP
7 VIDEO GND
8 COMP SYNC
9 VIDEO GND
10 PAL JOG HD
11 C OUT
12 C IN
TO VS-126 BOARD (5/5) CN204
(See Page 4-42)
09

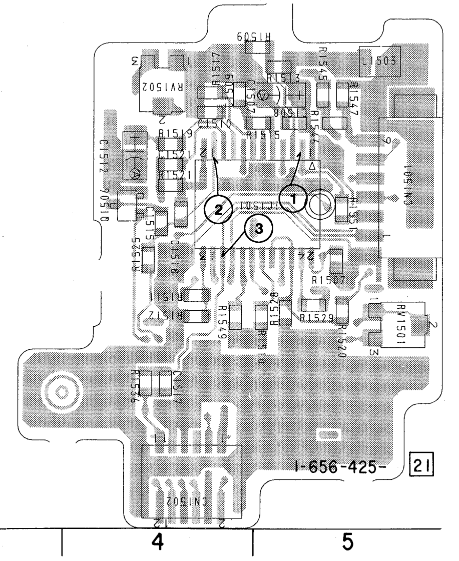
PJ-70 BOARD

C1506	A-1
C1507	C-5
C1508	C-5
C1509	C-4
C1510	C-4
C1511	B-2
C1512	B-4
C1514	B-2
C1515	B-4
C1516	B-2
C1518	B-4
C1521	B-4
CN1502	A-4
IC1501	B-5
L1504	C-1
Q1506	B-4
R1505	B-1
R1507	B-5
R1512	B-4
R1513	C-5
R1514	B-2
R1515	C-5
R1516	B-1
R1517	C-4
R1519	C-4
R1520	B-5
R1521	B-4
R1524	B-2
R1525	B-4
R1526	B-2
R1529	B-5
R1550	C-2

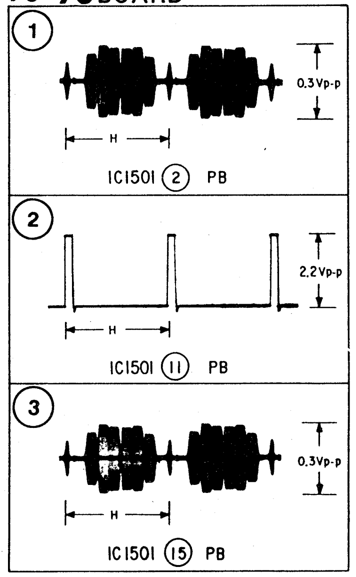
PJ-70BOARD (CONDUCTOR SIDE)



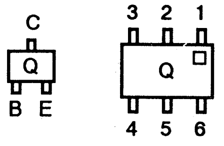
PJ-70BOARD (COMPONENT SIDE)


①
②
③
1-656-425- 21
4
5

PJ-70BOARD

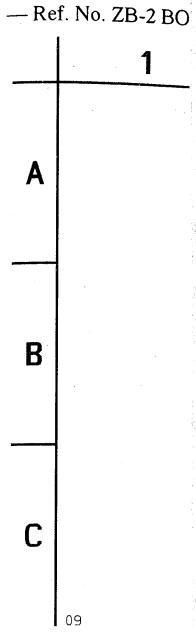


- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor

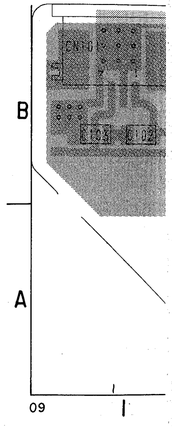

C
Q
B E
3 2 1
Q
4 5 6

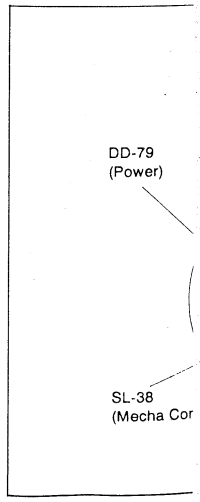
ZB-2 (LITHIUM

— Ref. No. ZB-2 BO



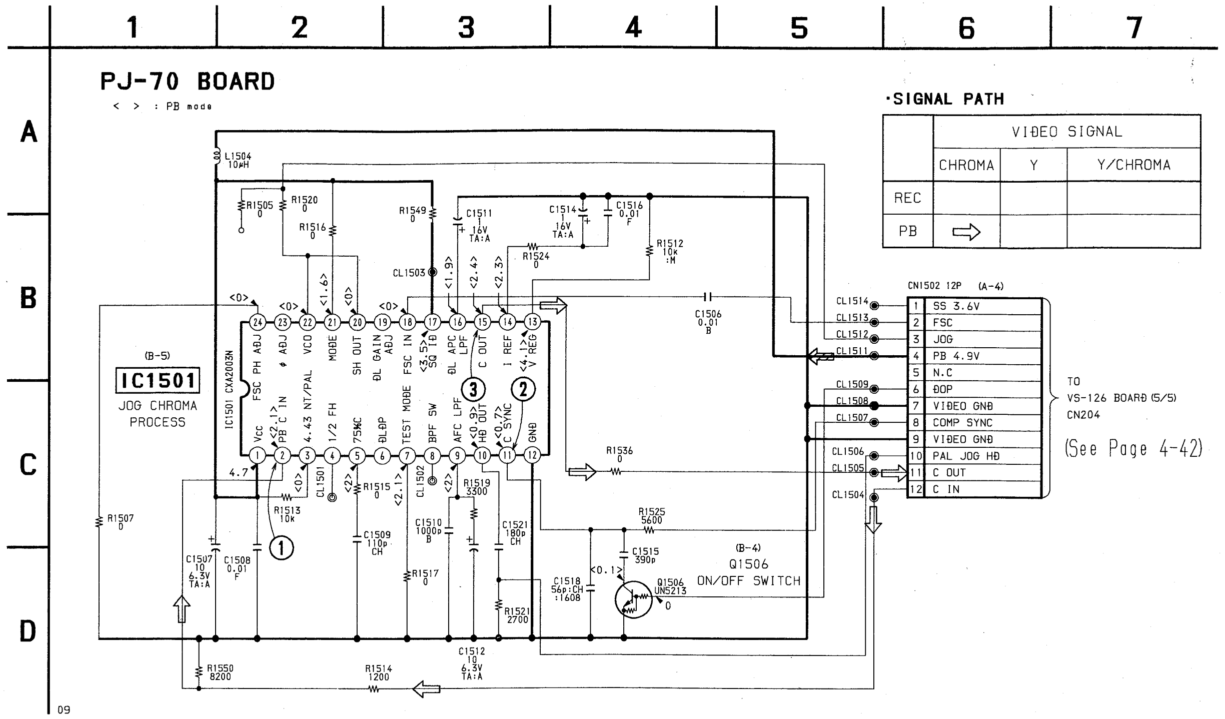
ZB-2 BOARI




DD-79 (Power)
SL-38 (Mecha Cor

L1121	B-2
L1122	B-1
L1123	B-1
L1124	D-1
L1125	E-1
L1126	E-1
L1128	B-3
Q1102	D-4
Q1103	D-3
Q1107	E-5
Q1110	D-5
Q1111	E-3
Q1113	E-2
Q1114	E-2
Q1115	E-3
Q1117	D-3
Q1118	D-3
Q1119	E-1
Q1120	A-2
Q1121	D-1
Q1122	A-3
Q1123	B-3
Q1125	B-2
Q1126	A-1
Q1127	B-2
Q1128	A-1
Q1129	A-1
Q1130	A-1
Q1131	B-1
Q1132	B-1
Q1133	B-1
Q1134	D-1
Q1135	E-1
Q1136	E-1
Q1137	B-1
Q1138	D-2
Q1139	E-1
Q1143	A-2
R1100	B-3
R1101	B-4
R1102	B-4
R1103	A-4
R1104	B-3
R1105	D-4
R1106	A-4
R1107	B-4
R1108	A-4
R1109	A-4
R1110	A-4
R1111	D-3
R1112	D-3
R1113	E-4
R1114	D-4
R1115	D-4
R1116	E-4
R1118	E-4
R1119	A-4
R1120	A-4
R1123	A-5
R1124	D-4
R1125	B-5
R1127	A-5
R1128	B-5
R1129	B-5
R1130	B-5
R1131	B-5
R1132	E-4
R1134	E-4
R1135	E-4
R1136	D-5
R1138	E-5
R1148	D-5
R1149	D-5
R1151	E-2
R1152	E-3
R1153	D-2
R1154	D-2
R1155	D-2
R1156	E-2
R1157	E-2
R1158	D-2
R1159	D-3
R1160	E-3
R1161	E-2
R1162	E-2
R1163	D-3
R1164	E-2
R1165	D-1
R1166	D-1
R1167	E-3
R1168	D-1
R1169	D-2
R1170	E-2
R1171	E-2
R1172	E-1
R1173	D-3
R1174	B-3
R1175	E-3
R1176	D-1
R1177	B-3
R1178	B-3
R1179	D-1
R1181	A-3
R1182	D-1
R1183	A-2
R1184	A-1
R1185	A-3
R1186	A-1
R1187	A-3
R1188	A-2
R1189	A-2
R1191	A-2
R1194	B-2
R1195	E-2
R1196	B-1
R1197	B-1
R1198	A-1
R1199	A-1
R1201	A-2
R1202	B-1
R1203	A-1
R1204	A-1
R1205	A-1
R1206	A-1
R1207	A-1
R1208	A-1
R1209	A-1
R1210	A-1
R1212	E-4
R1213	E-4
R1214	A-1
R1215	B-1
R1216	B-1
R1217	B-1
R1218	D-2
R1219	D-2
R1220	D-1
R1221	D-1
R1222	E-1
R1223	D-1
R1224	E-1
R1225	D-2
R1229	D-3
R1231	E-1
R1232	A-2

PJ-70 (PAL JOG) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
A
B
C
D
PJ-70 BOARD
< > : PB mode
(B-5)
IC1501
JOG CHROMA PROCESS
IC1501 CXA2003N
Vcc
PB C IN
4.43 NT/PAL
1/2 FH
75%C
DLDP
TEST MODE
BPF SW
AFC LPF
HD OUT
C SYNC
GND
FSC PH ADJ
ϕ ADJ
VCO
MODE
SH OUT
DL GAIN ADJ
FSC IN
SQ ID
DL APC LPF
C OUT
I REF
V REG
L1504 10μH
R1505 0
R1520 0
R1516 0
R1549 0
C1511 1 16V TA:A
C1514 1 16V TA:A
C1516 0.01 F
R1512 10k :M
R1524 0
CL1503
R1507 0
R1513 10k
C1507 10 6.3V TA:A
C1508 0.01 F
CL1501
R1515 0
C1509 110p CH
R1517 0
CL1502
C1510 1000p B
R1519 3300
C1521 180p CH
R1521 2700
C1512 10 6.3V TA:A
R1550 8200
R1514 1200
R1536 0
R1525 5600
C1515 390p
C1518 56p:CH :1608
(B-4)
Q1506 UN5213
Q1506 ON/OFF SWITCH
C1506 0.01 B
CN1502 12P (A-4)
CL1514
CL1513
CL1512
CL1511
CL1509
CL1508
CL1507
CL1506
CL1505
CL1504
1 SS 3.6V
2 FSC
3 JOG
4 PB 4.9V
5 N.C
6 DOP
7 VIDEO GND
8 COMP SYNC
9 VIDEO GND
10 PAL JOG HD
11 C OUT
12 C IN
TO VS-126 BOARD (5/5) CN204
(See Page 4-42)
09

·SIGNAL PATH

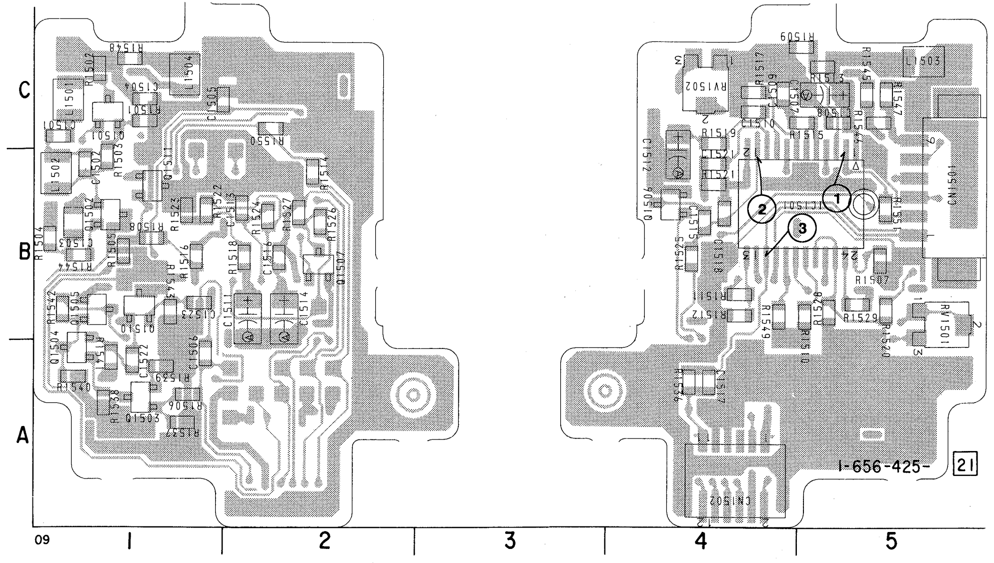
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			
PB	⇨		

PJ-70 BOARD

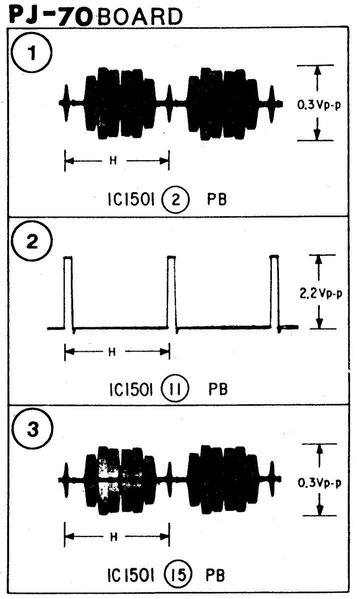
C1506	A-1
C1507	C-5
C1508	C-5
C1509	C-4
C1510	C-4
C1511	B-2
C1512	B-4
C1514	B-2
C1515	B-4
C1516	B-2
C1518	B-4
C1521	B-4
CN1502	A-4
IC1501	B-5
L1504	C-1
Q1506	B-4
R1505	B-1
R1507	B-5
R1512	B-4
R1513	C-5
R1514	B-2
R1515	C-5
R1516	B-1
R1517	C-4
R1519	C-4
R1520	B-5
R1521	B-4
R1524	B-2
R1525	B-4
R1526	B-2
R1529	B-5
R1550	C-2

PJ-70BOARD
(CONDUCTOR SIDE)

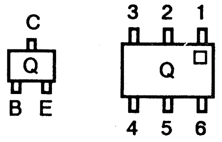
PJ-70BOARD
(COMPONENT SIDE)


C
B
A
1-656-425-
21
09
1
2
3
4
5
①
②
③

PJ-70BOARD

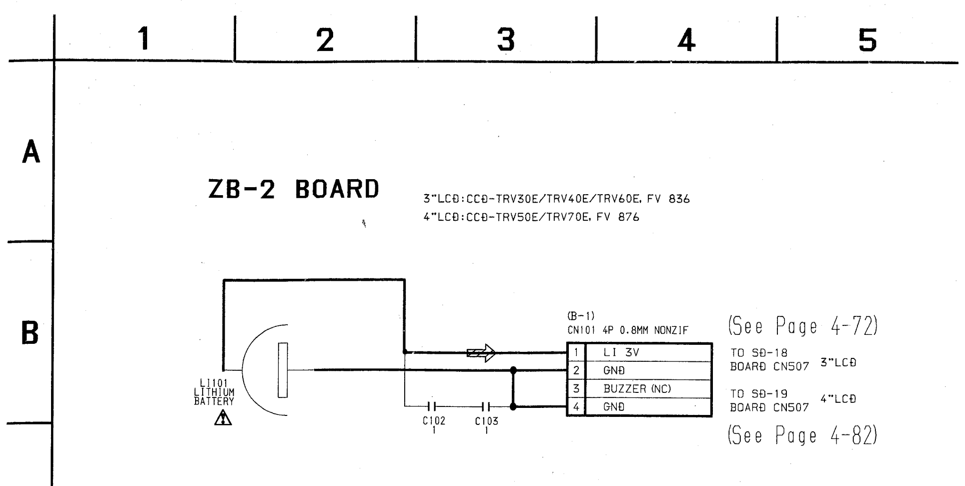


- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor


C
Q
B E
3 2 1
Q
4 5 6

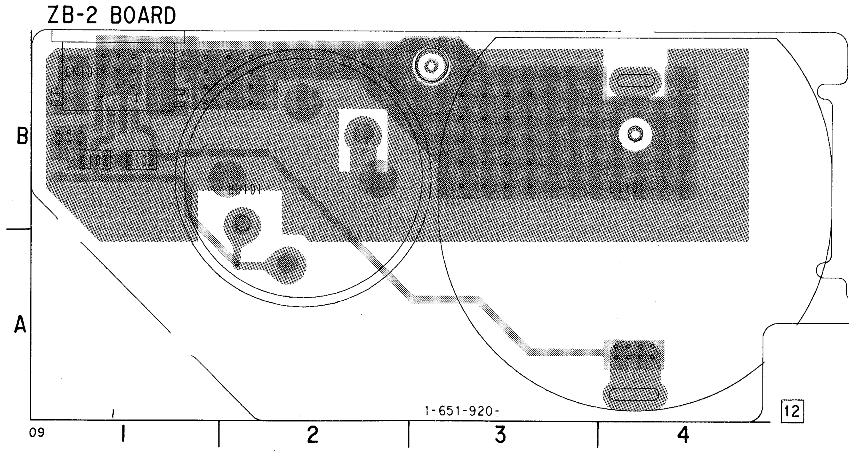
ZB-2 (LITHIUM BATTERY) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

— Ref. No. ZB-2 BOARD: 2000 series —


1
2
3
4
5
A
B
C
ZB-2 BOARD
3"LCD:CCD-TRV30E/TRV40E/TRV60E, FV 836
4"LCD:CCD-TRV50E/TRV70E, FV 876
LI101 LITHIUM BATTERY
C102 1
C103 1
(B-1)
CN101 4P 0.8MM NONZIF
1 LI 3V
2 GND
3 BUZZER (NC)
4 GND
(See Page 4-72)
TO SD-18 BOARD CN507 3"LCD
TO SD-19 BOARD CN507 4"LCD
(See Page 4-82)

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

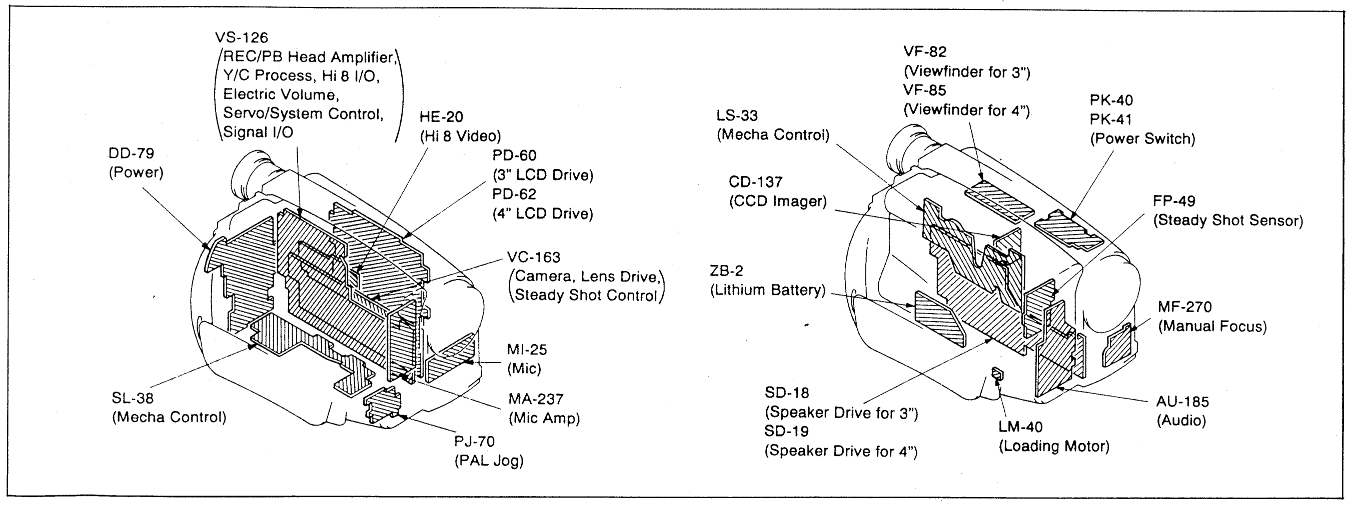
ZB-2 BOARD


B
A
CN101
C102
C103
BT101
L1101
1-651-920-
12
09
1
2
3
4

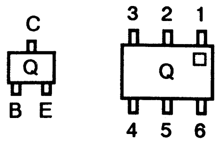
ZB-2 BOARD

C102	B-1
C103	B-1
CN101	B-1
LI101	B-4

- **For printed wiring board.**
- ▒ : Pattern from the side which enables seeing.
- ▓ : Pattern of the rear side.
- ○ : Through hole.

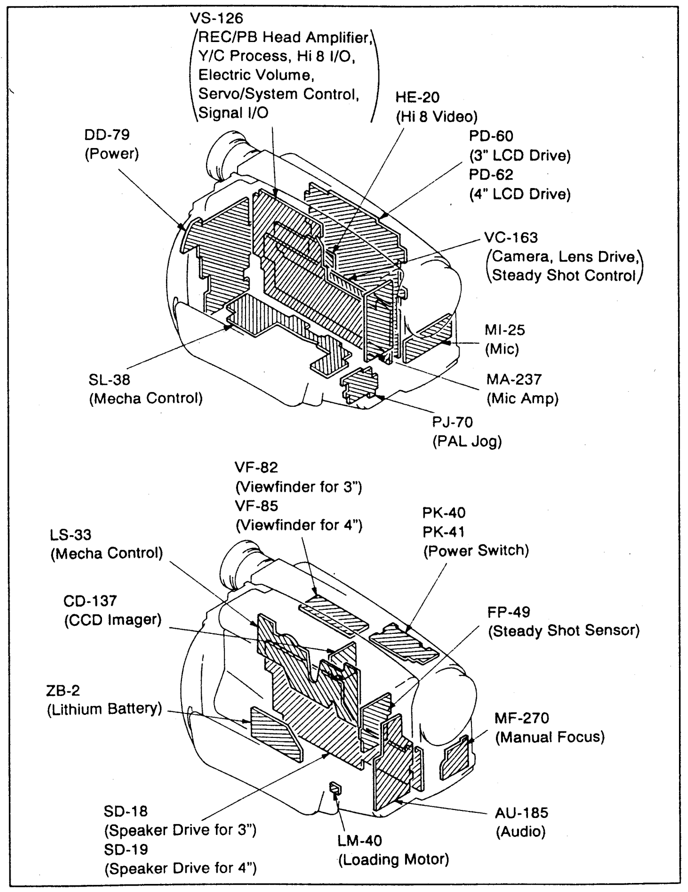

VS-126
(REC/PB Head Amplifier, Y/C Process, Hi 8 I/O, Electric Volume, Servo/System Control, Signal I/O)
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive, Steady Shot Control)
MI-25
(Mic)
MA-237
(Mic Amp)
SL-38
(Mecha Control)
PJ-70
(PAL Jog)
VF-82
(Viewfinder for 3")
VF-85
(Viewfinder for 4")
LS-33
(Mecha Control)
PK-40
PK-41
(Power Switch)
CD-137
(CCD Imager)
FP-49
(Steady Shot Sensor)
ZB-2
(Lithium Battery)
MF-270
(Manual Focus)
SD-18
(Speaker Drive for 3")
SD-19
(Speaker Drive for 4")
LM-40
(Loading Motor)
AU-185
(Audio)

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- ○ : Through hole.
- Chip transistor



C
Q
B
E
3
2
1
Q
4
5
6

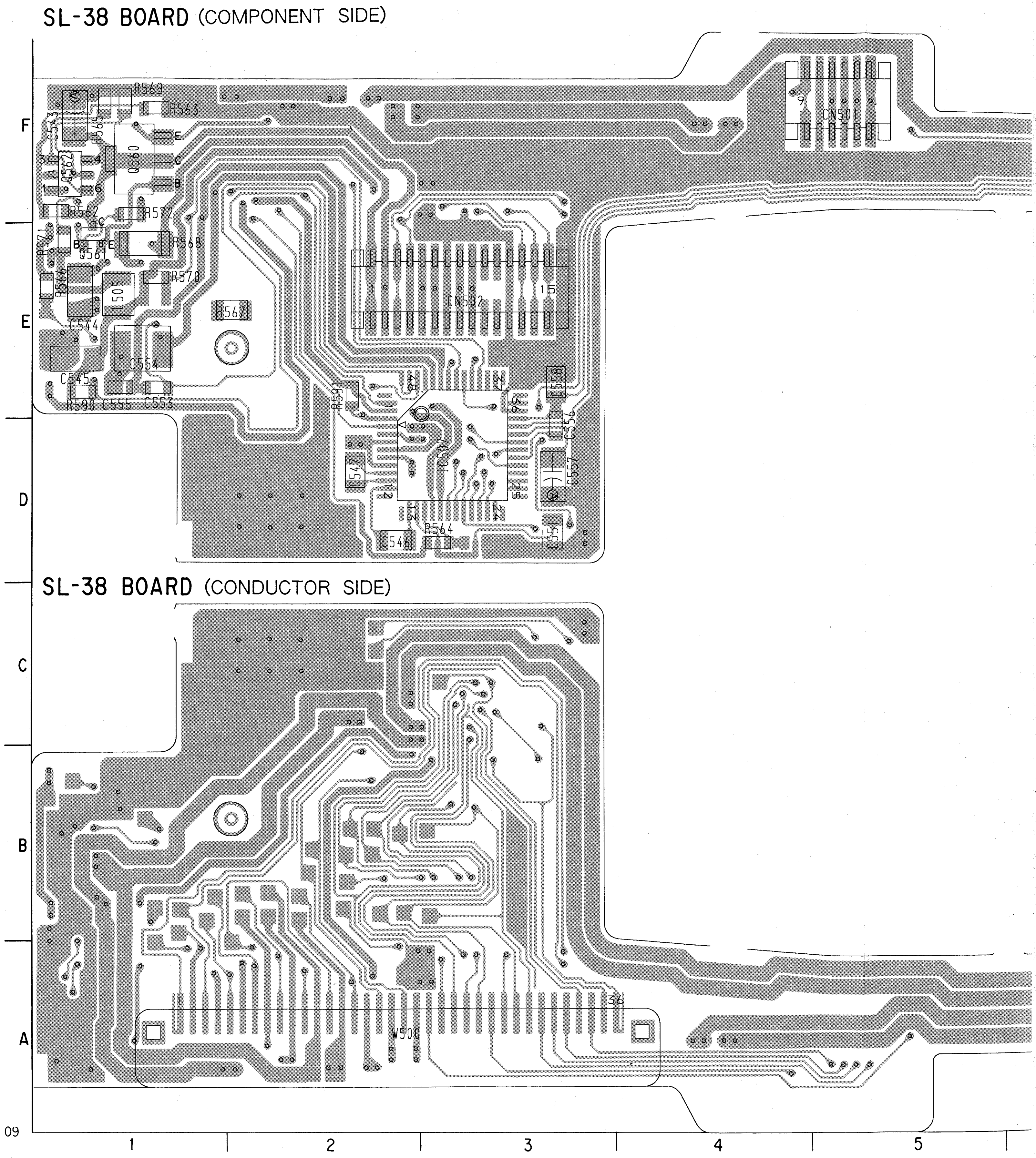
SL-38 BOARD	
C543	F-1
C544	E-1
C545	E-1
C546	D-2
C547	D-2
C551	D-3
C553	E-1
C554	E-1
C555	E-1
C556	D-3
C557	D-3
C558	E-3
CN500	F-7
CN501	F-5
CN502	E-3
IC507	D-3
L505	E-1
Q560	F-1
Q561	E-1
Q562	F-1
R562	F-1
R563	F-1
R564	D-3
R565	F-1
R566	E-1
R567	E-2
R568	E-1
R569	F-1
R570	E-1
R571	E-1
R572	F-1
R590	E-1
R591	E-2
W500	A-2
W501	B-9



VS-126
(REC/PB Head Amplifier, Y/C Process, Hi 8 I/O, Electric Volume, Servo/System Control, Signal I/O)
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive, Steady Shot Control)
MI-25
(Mic)
SL-38
(Mecha Control)
MA-237
(Mic Amp)
PJ-70
(PAL Jog)
VF-82
(Viewfinder for 3")
VF-85
(Viewfinder for 4")
LS-33
(Mecha Control)
PK-40
PK-41
(Power Switch)
CD-137
(CCD Imager)
FP-49
(Steady Shot Sensor)
ZB-2
(Lithium Battery)
MF-270
(Manual Focus)
SD-18
(Speaker Drive for 3")
SD-19
(Speaker Drive for 4")
LM-40
(Loading Motor)
AU-185
(Audio)

SL-38 (MECHA CONTROL) PRINTED WIRING BOARD

— Ref. No. SL-38 BOARD: 2000 series —



SL-38 BOARD (COMPONENT SIDE)
SL-38 BOARD (CONDUCTOR SIDE)
F
E
D
C
B
A
1
2
3
4
5
09
R569
R563
R565
C543
Q562
Q560
R562
R572
R571
Q561
R568
R570
R566
L505
C544
R567
C554
C545
R590
C555
C553
CN501
CN502
R591
IC507
C558
C556
C557
C547
C546
R564
C551
W500
36

SL-38 (MECHA CONTROL) PRINTED WIRING BOARD

— Ref. No. SL-38 BOARD: 2000 series —

SL-38 BOARD	
C543	F-1
C544	E-1
C545	E-1
C546	D-2
C547	D-2
C551	D-3
C553	E-1
C554	E-1
C555	E-1
C556	D-3
C557	D-3
C558	E-3
CN500	F-7
CN501	F-5
CN502	E-3
IC507	D-3
L505	E-1
Q560	F-1
Q561	E-1
Q562	F-1
R562	F-1
R563	F-1
R564	D-3
R565	F-1
R566	E-1
R567	E-2
R568	E-1
R569	F-1
R570	E-1
R571	E-1
R572	F-1
R590	E-1
R591	E-2
W500	A-2
W501	B-9

Drive)

Drive)

3
era, Lens Drive,
dy Shot Control

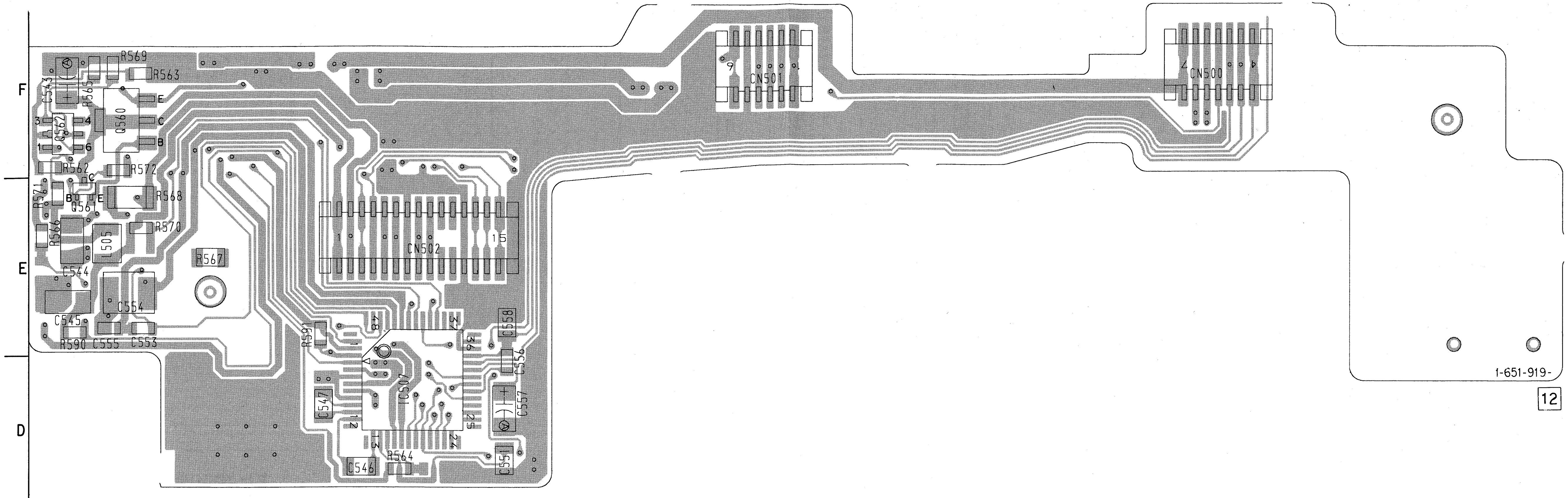
37
mp)

dy Shot Sensor)

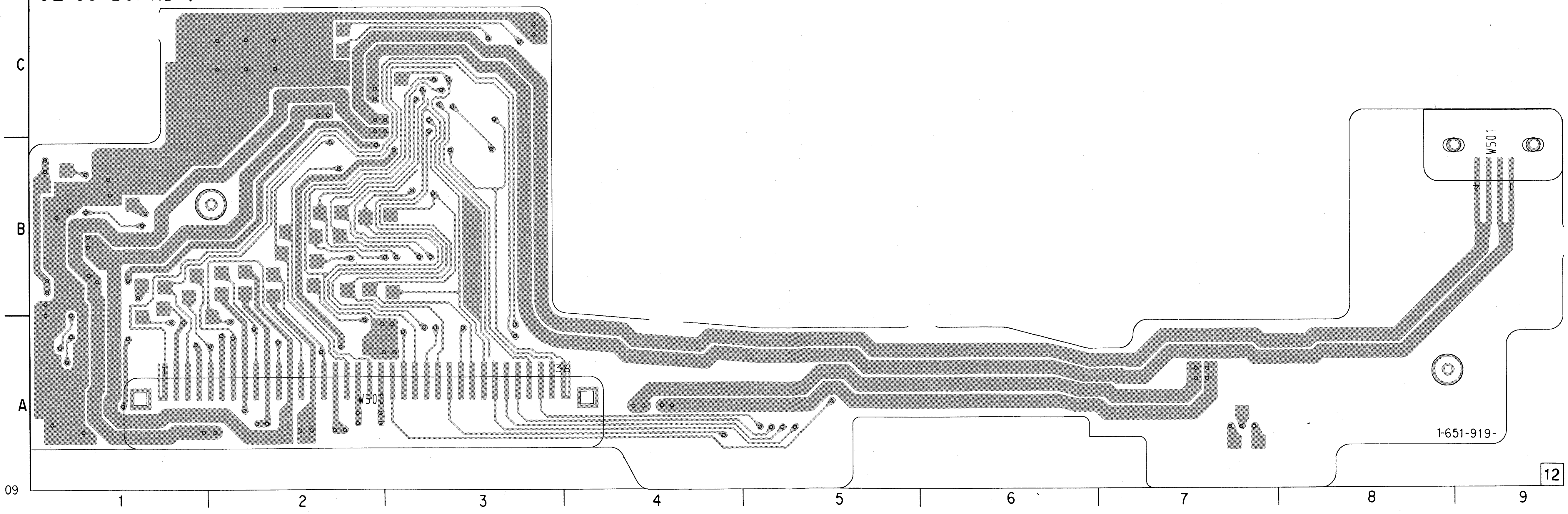
270
ual Focus)

85
io)

SL-38 BOARD (COMPONENT SIDE)

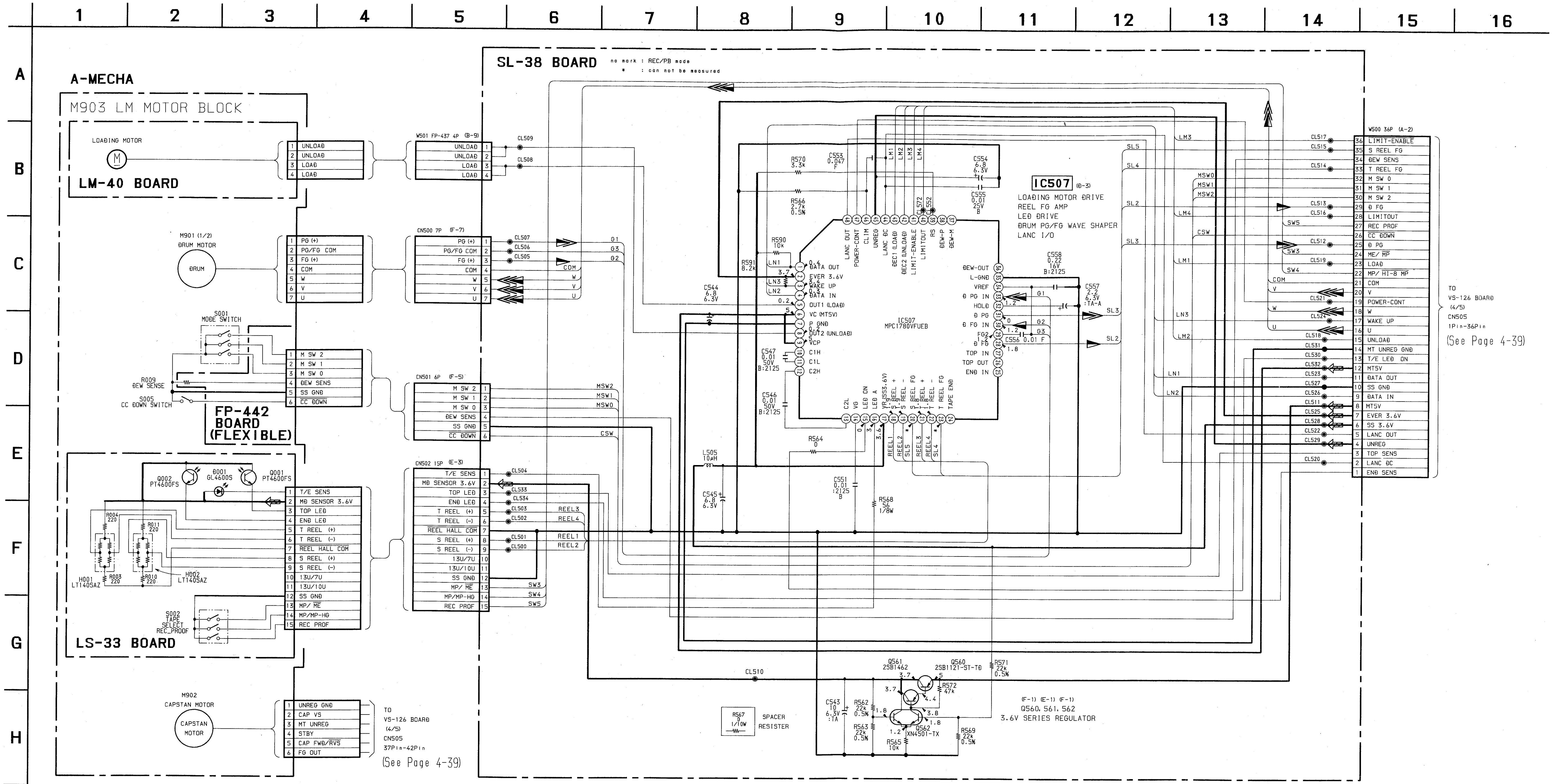

F
E
D
R569
R563
C543
R565
Q560
Q562
E
C
B
3
4
6
R562
R572
R571
B
C
E
Q561
R568
R566
L505
R570
R567
C544
C554
C545
R590
C555
C553
CN501
9
1
CN500
4
1
5
CN502
15
R591
48
37
36
IC507
C558
C556
C557
C547
12
13
24
25
C546
R564
C551
1-651-919-
12

SL-38 BOARD (CONDUCTOR SIDE)


C
B
A
W501
4
1
1
36
W500
1-651-919-
12
09
1
2
3
4
5
6
7
8
9

SL-38 (MECHA CONTROL), LS-33 (MECHA CONTROL) SCHEMATIC DIAGRAM

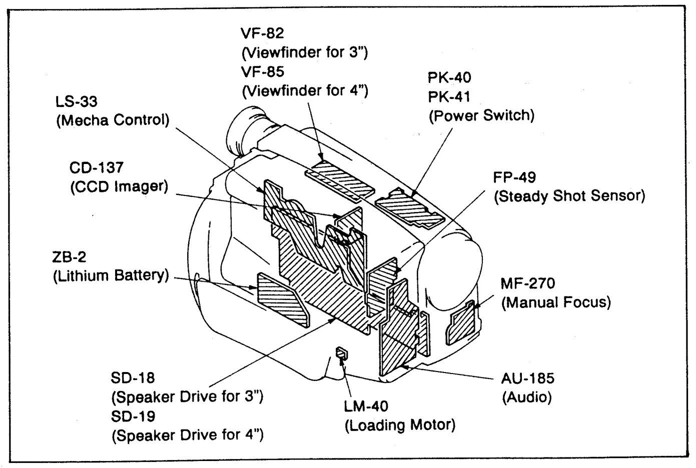
— Ref. No. SL-38 BOARD: 2000 series, LS-33 BOARD: 7000 series —


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I
A-MECHA
M903 LM MOTOR BLOCK
LOADING MOTOR
LM-40 BOARD
UNLOAD
UNLOAD
LOAD
LOAD
M901 (1/2) DRUM MOTOR
DRUM
PG (+)
PG/FG COM
FG (+)
COM
W
V
U
S001 MODE SWITCH
R009 DEW SENSE
S005 CC DOWN SWITCH
M SW 2
M SW 1
M SW 0
DEW SENS
SS GND
CC DOWN
FP-442 BOARD (FLEXIBLE)
Q002 PT4600FS
D001 GL4600S
Q001 PT4600FS
H001 LT1405AZ
H002 LT1405AZ
T/E SENS
MD SENSOR 3.6V
TOP LED
END LED
T REEL (+)
T REEL (-)
REEL HALL COM
S REEL (+)
S REEL (-)
13U/7U
13U/10U
SS GND
MP/ HE
MP/MP-HG
REC PROF
S002 TAPE SELECT REC_PROOF
LS-33 BOARD
M902 CAPSTAN MOTOR
CAPSTAN MOTOR
UNREG GND
CAP VS
MT UNREG
STBY
CAP FWD/RVS
FG OUT
TO VS-126 BOARD (4/5) CN505 37Pin-42Pin (See Page 4-39)
SL-38 BOARD
no mark : REC/PB mode
* : can not be measured
W501 FP-437 4P (B-5)
CN500 7P (F-7)
CN501 6P (F-5)
CN502 15P (E-3)
IC507 (B-3)
LOADING MOTOR DRIVE
REEL FG AMP
LED DRIVE
DRUM PG/FG WAVE SHAPER
LANC I/O
IC507 MPC1780VFUEB
W500 36P (A-2)
LIMIT-ENABLE
S REEL FG
DEW SENS
T REEL FG
M SW 0
M SW 1
M SW 2
D FG
LIMITOUT
REC PROF
CC DOWN
D PG
ME/ MP
LOAD
MP/ Hi-8 MP
COM
V
POWER-CONT
W
WAKE UP
U
UNLOAD
MT UNREG GND
T/E LED ON
MTSV
DATA OUT
SS GND
DATA IN
MTSV
EVER 3.6V
SS 3.6V
LANC OUT
UNREG
TOP SENS
LANC DC
END SENS
TO VS-126 BOARD (4/5) CN505 1Pin-36Pin (See Page 4-39)
Q561 2SB1462
Q560 2SB1121-ST-TD
Q562 XN4501-TX
(F-1) (E-1) (F-1) Q560, 561, 562 3.6V SERIES REGULATOR
R567 0 1/10W SPACER RESISTER
CL510
L505 10μH
09

·Printed wiring boards of FP-442, LM-40 and LS-33 boards are omitted.

·SIGNAL PATH

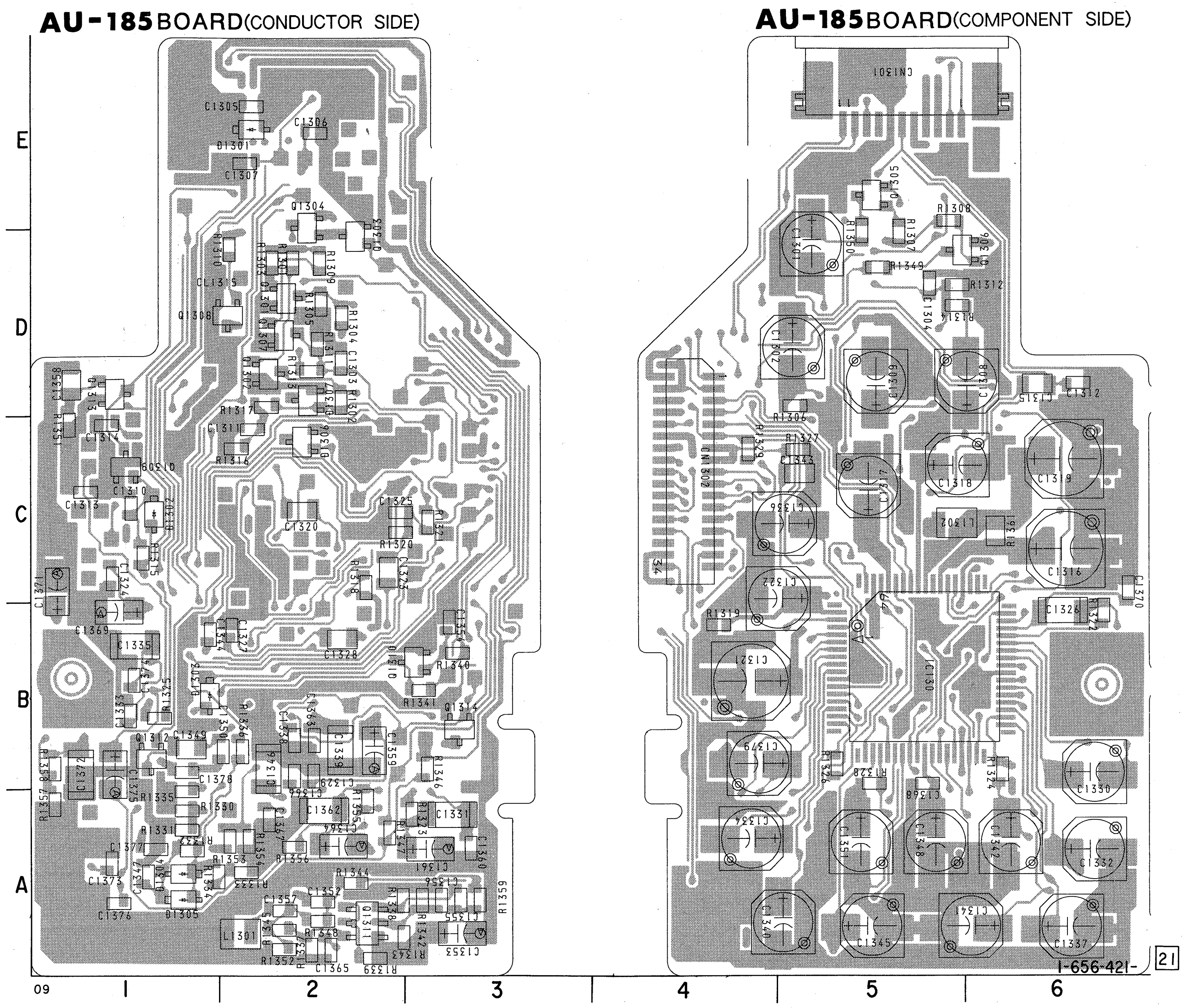
	REC	REC/PB	PB
Drum speed servo		▶	
Drum phase servo		⇒	
Drum servo (speed and phase)		⋙	


VF-82
(Viewfinder for 3")
VF-85
(Viewfinder for 4")
PK-40
PK-41
(Power Switch)
LS-33
(Mecha Control)
CD-137
(CCD Imager)
FP-49
(Steady Shot Sensor)
ZB-2
(Lithium Battery)
MF-270
(Manual Focus)
SD-18
(Speaker Drive for 3")
SD-19
(Speaker Drive for 4")
LM-40
(Loading Motor)
AU-185
(Audio)

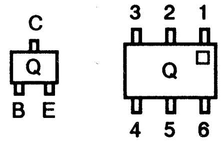
AU-185 BOARD

C1301	D-5
C1302	D-5
C1305	E-2
C1308	D-6
C1309	D-5
C1313	C-1
C1314	C-1
C1315	D-6
C1316	C-6
C1317	C-5
C1318	C-5
C1319	C-6
C1320	C-2
C1321	B-4
C1322	C-5
C1323	C-2
C1324	C-1
C1326	B-6
C1328	B-2
C1329	B-2
C1330	B-6
C1331	A-3
C1332	A-6
C1333	B-1
C1334	A-4
C1335	B-1
C1336	C-5
C1337	A-6
C1338	B-2
C1339	B-2
C1340	A-5
C1341	A-6
C1342	A-6
C1343	C-5
C1344	B-1
C1345	A-5
C1346	B-2
C1347	A-1
C1348	A-5
C1350	B-2
C1351	A-5
C1352	A-2
C1358	D-1
C1373	A-1
C1379	B-4
CN1301	E-5
CN1302	C-4
D1303	B-1
D1306	C-2
D1307	D-2
IC130	B-5
L1302	C-5
Q1301	D-2
Q1302	D-2
Q1303	D-2
Q1304	E-2
Q1305	E-5
Q1306	D-6
Q1307	D-2
Q1308	D-2
Q1309	C-1
Q1313	D-1
Q1314	B-3
R1301	D-2
R1302	D-2
R1303	D-2
R1304	D-2
R1306	D-5
R1307	D-5
R1308	E-5
R1309	D-2
R1310	D-2
R1313	D-2
R1314	D-5
R1315	C-1
R1316	C-2
R1317	D-2
R1318	C-2
R1319	B-4
R1320	C-2
R1321	C-3
R1322	B-6
R1323	A-3
R1324	B-6
R1325	B-1
R1326	B-5
R1328	B-5
R1329	C-4
R1331	A-1
R1332	A-1
R1333	A-2
R1334	A-1
R1336	B-2
R1341	B-3
R1344	A-2
R1346	B-3
R1347	A-2
R1348	A-2
R1349	D-5
R1350	D-5
R1351	C-1
R1352	A-2
R1355	A-1
R1358	B-1
R1361	C-6

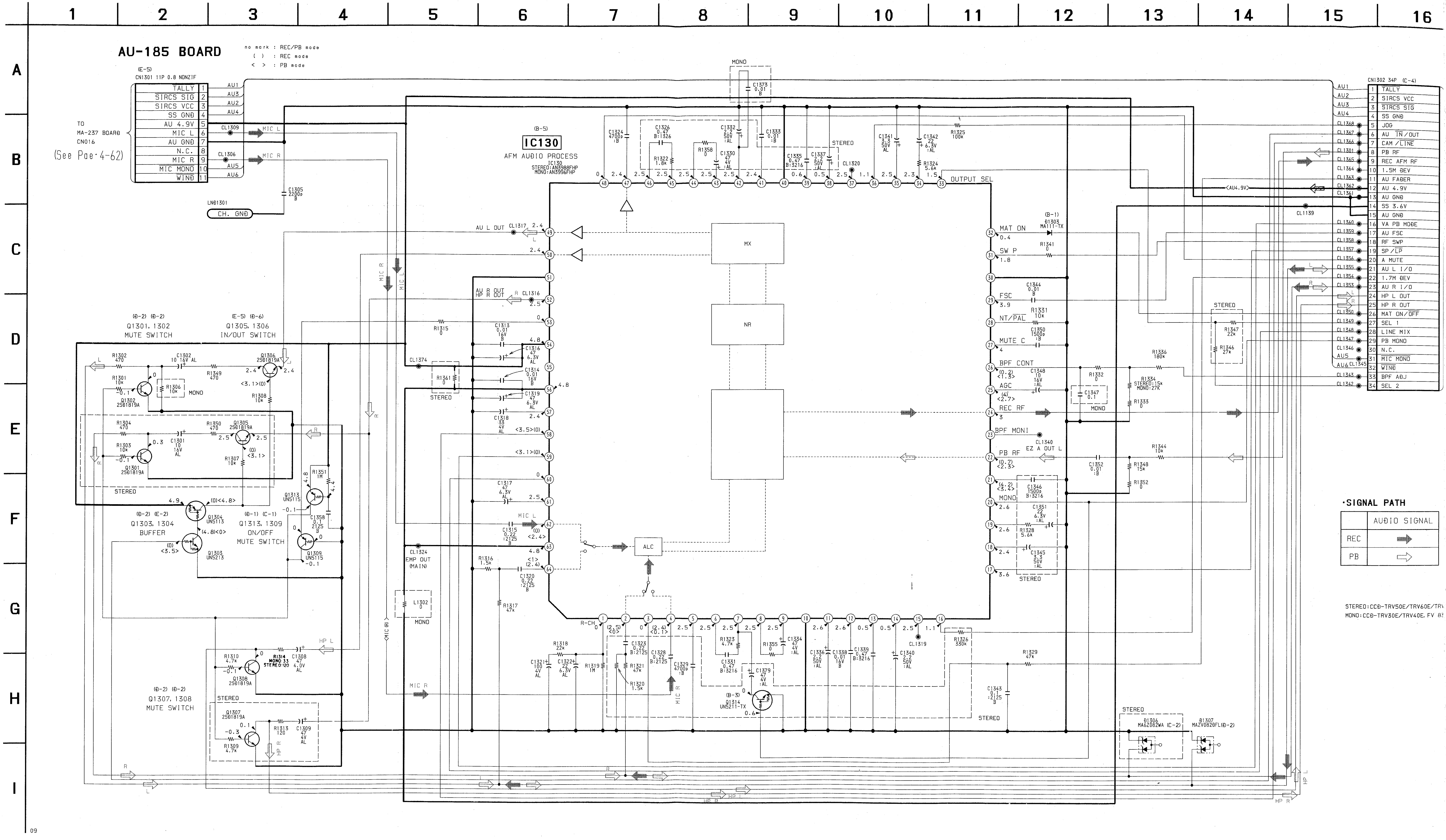
AU-185 (AUDIO) PRINTED WIRING BOARD


AU-185 BOARD(CONDUCTOR SIDE)
AU-185 BOARD(COMPONENT SIDE)
E
D
C
B
A
09
1
2
3
4
5
6
1-656-421-
21
CN1301
CN1302
IC130
L1301
L1302
Q1301
Q1304
Q1305
Q1308
Q1314
C1305
C1306
C1307
C1319
C1320
C1328
C1331
C1332
C1337
C1345
C1350

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor


C
Q
B E
3 2 1
Q
4 5 6

AU-185 (AUDIO) SCHEMATIC DIAGRAM

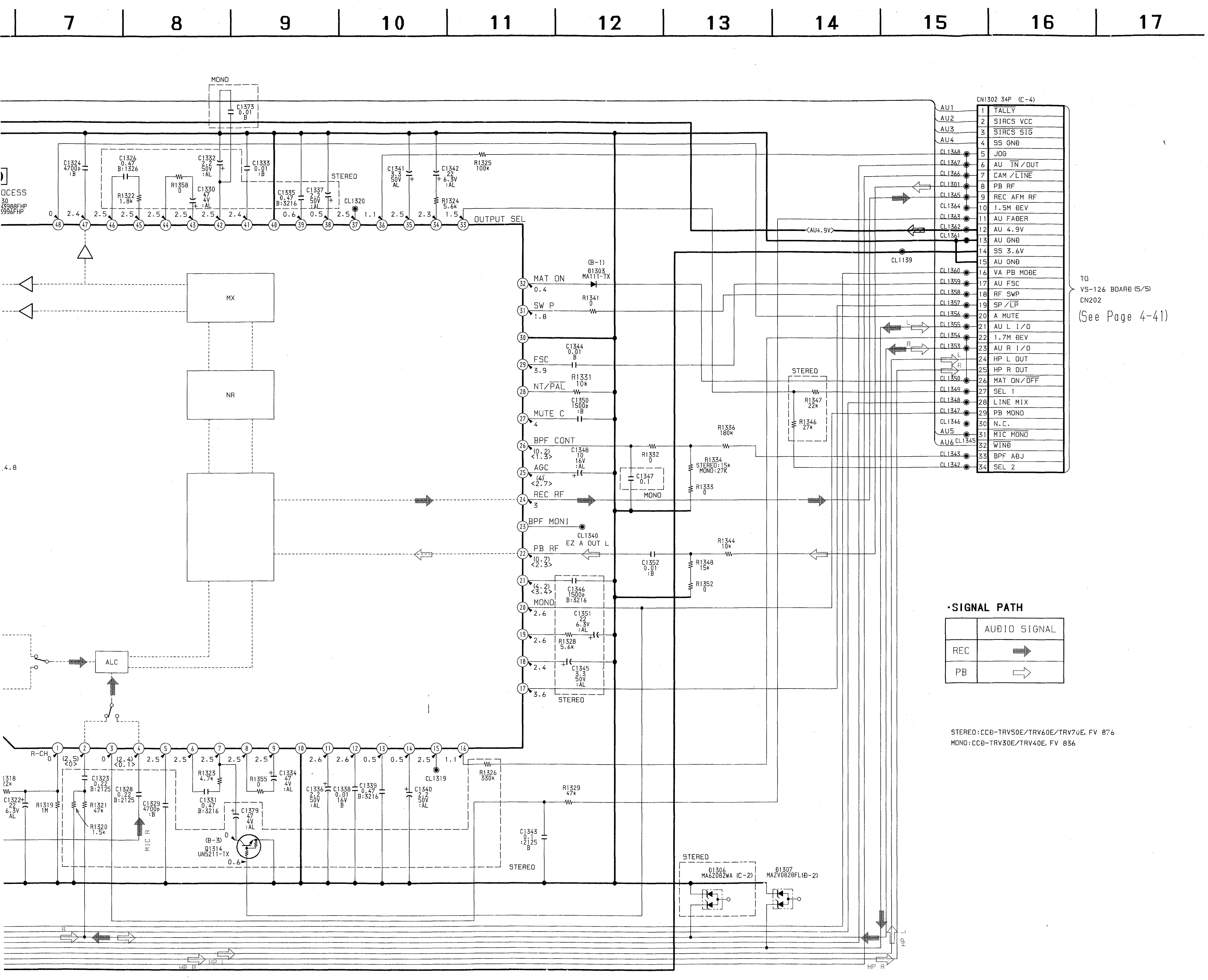

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
AU-185 BOARD
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
(E-5)
CN1301 11P 0.8 NONZIF
TALLY 1
SIRCS SIG 2
SIRCS VCC 3
SS GND 4
AU 4.9V 5
MIC L 6
AU GND 7
N.C. 8
MIC R 9
MIC MONO 10
WIND 11
TO
MA-237 BOARD
CN016
(See Pae·4-62)
LND1301
CH. GND
C1305 2200p B
(B-5)
IC130
AFM AUDIO PROCESS
IC130
STEREO:AN3988FHP
MONO:AN3996FHP
MONO
C1373 0.01 B
STEREO
OUTPUT SEL
AU L OUT
AU R OUT
HP R OUT
MX
NR
ALC
MAT ON
SW P
FSC
NT/PAL
MUTE C
BPF CONT
AGC
REC RF
BPF MONI
PB RF
MONO
(B-1)
D1303
MA111-TX
CL1340
EZ A OUT L
EMP OUT (MAIN)
L1302 0
R-CH
(D-2) (D-2)
Q1301, 1302
MUTE SWITCH
(E-5) (D-6)
Q1305, 1306
IN/OUT SWITCH
(D-2) (E-2)
Q1303, 1304
BUFFER
(D-1) (C-1)
Q1313, 1309
ON/OFF
MUTE SWITCH
(D-2) (D-2)
Q1307, 1308
MUTE SWITCH
(B-3)
Q1314
UN5211-TX
STEREO
D1304
MA6Z082WA (C-2)
D1307
MAZV082DFL(D-2)
CN1302 34P (C-4)
1 TALLY
2 SIRCS VCC
3 SIRCS SIG
4 SS GND
5 JOG
6 AU IN/OUT
7 CAM/LINE
8 PB RF
9 REC AFM RF
10 1.5M DEV
11 AU FADER
12 AU 4.9V
13 AU GND
14 SS 3.6V
15 AU GND
16 VA PB MODE
17 AU FSC
18 RF SWP
19 SP/LP
20 A MUTE
21 AU L I/O
22 1.7M DEV
23 AU R I/O
24 HP L OUT
25 HP R OUT
26 MAT ON/OFF
27 SEL 1
28 LINE MIX
29 PB MONO
30 N.C.
31 MIC MONO
32 WIND
33 BPF ADJ
34 SEL 2
(AU4.9V)
MIC L
MIC R
HP L
HP R
09

·SIGNAL PATH

	AUDIO SIGNAL
REC	➡
PB	⇨

STEREO:CCD-TRV50E/TRV60E/TR

MONO:CCD-TRV30E/TRV40E, FV 8

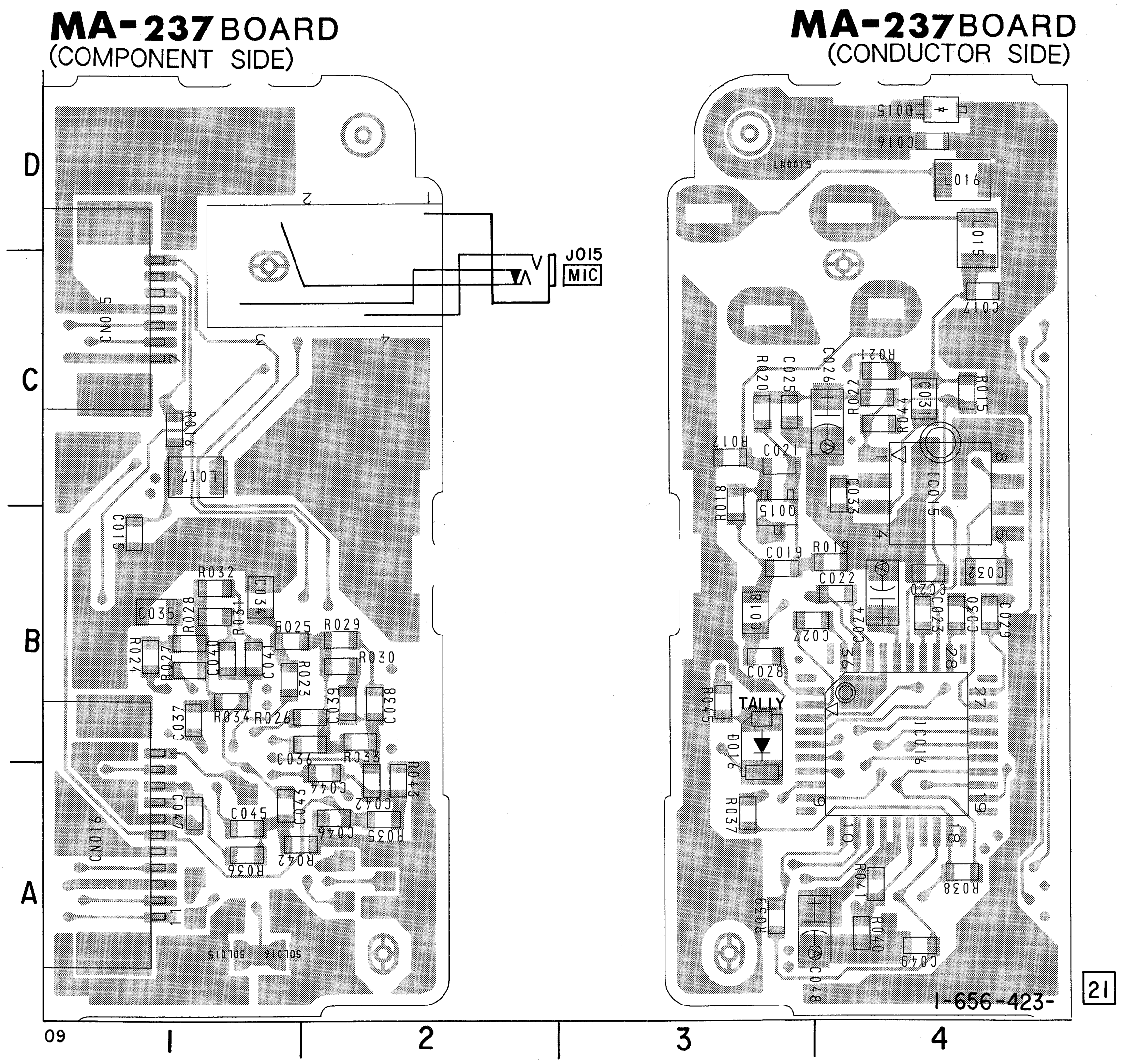

7
8
9
10
11
12
13
14
15
16
17
MONO
STEREO
OUTPUT SEL
MX
NR
ALC
MAT ON
SW P
FSC
NT/PAL
MUTE C
BPF CONT
AGC
REC RF
BPF MONI
PB RF
MONO
EZ A OUT L
R-CH
MIC R
HP R
HP L
<AU4.9V>
CL1139
Q1303 MA111-TX
Q1314 UN5211-TX
Q1306 MA6Z082WA (C-2)
Q1307 MAZV0620FL(D-2)
CN1302 34P (C-4)
AU1 1 TALLY
AU2 2 SIRCS VCC
AU3 3 SIRCS SIG
AU4 4 SS GND
CL1368 5 JOG
CL1367 6 AU IN/OUT
CL1366 7 CAM/LINE
CL1301 8 PB RF
CL1365 9 REC AFM RF
CL1364 10 1.5M DEV
CL1363 11 AU FADER
CL1362 12 AU 4.9V
CL1361 13 AU GND
14 SS 3.6V
15 AU GND
CL1360 16 VA PB MODE
CL1359 17 AU FSC
CL1358 18 RF SWP
CL1357 19 SP/LP
CL1356 20 A MUTE
CL1355 21 AU L I/O
CL1354 22 1.7M DEV
CL1353 23 AU R I/O
24 HP L OUT
25 HP R OUT
CL1350 26 MAT ON/OFF
CL1349 27 SEL 1
CL1348 28 LINE MIX
CL1347 29 PB MONO
CL1346 30 N.C.
AU5 31 MIC MONO
AU6 CL1345 32 WIND
CL1343 33 BPF ADJ
CL1342 34 SEL 2
TO
VS-126 BOARD (5/5)
CN202
(See Page 4-41)

·SIGNAL PATH

	AUDIO SIGNAL
REC	➡
PB	⇨

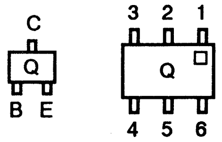
STEREO:CCD-TRV50E/TRV60E/TRV70E, FV 876
MONO:CCD-TRV30E/TRV40E, FV 836

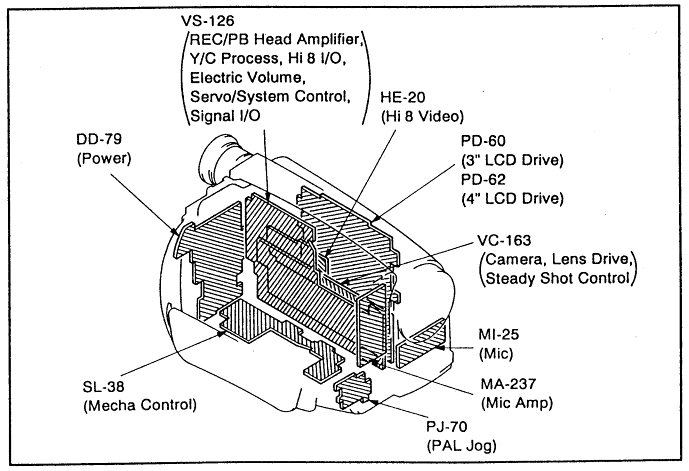
MA-237 (MIC AMP) PRINTED WIRING BOARD


MA-237 BOARD
(COMPONENT SIDE)
MA-237 BOARD
(CONDUCTOR SIDE)
J015
MIC
TALLY
1-656-423-
21
D
C
B
A
09
1
2
3
4

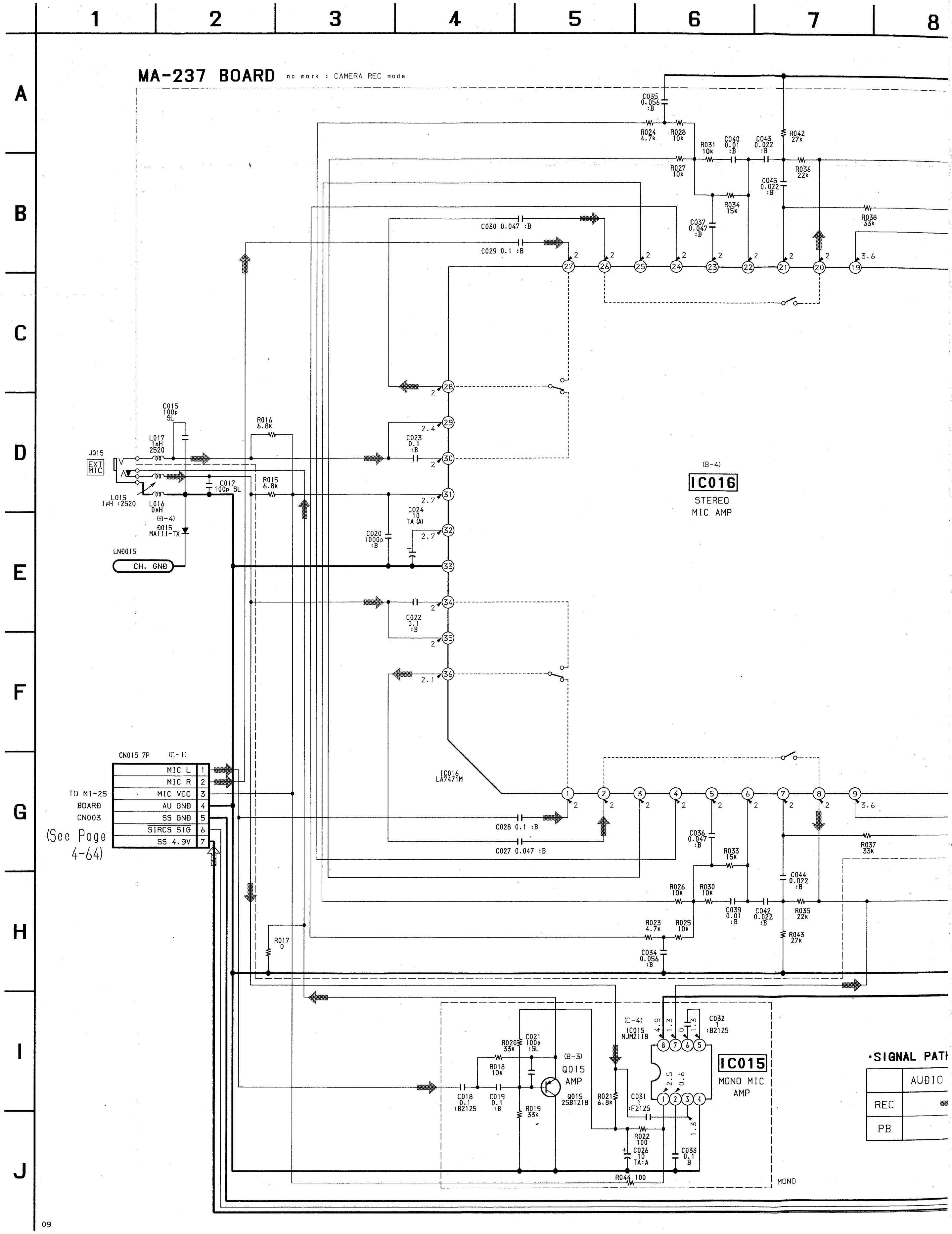
MA-237 BOARD	
C015	B-1
C017	C-4
C018	B-3
C019	B-3
C020	B-4
C021	C-3
C022	B-4
C023	B-4
C024	B-4
C026	C-4
C027	B-4
C028	B-3
C029	B-4
C030	B-4
C031	C-4
C032	B-4
C033	C-4
C034	B-1
C035	B-1
C036	B-2
C037	B-1
C039	B-2
C040	B-1
C042	A-2
C043	A-1
C044	A-2
C045	A-1
C048	A-3
C049	A-4
CN015	C-1
CN016	A-1
D015	D-4
D016	B-3
IC015	C-4
IC016	B-4
J015	C-2
L015	D-4
L016	D-4
L017	C-1
Q015	B-3
R015	C-4
R016	C-1
R017	C-3
R018	B-3
R019	B-4
R020	C-3
R021	C-4
R022	C-4
R023	B-1
R024	B-1
R025	B-1
R026	B-2
R027	B-1
R028	B-1
R030	B-2
R031	B-1
R033	B-2
R034	B-1
R035	A-2
R036	A-1
R037	A-3
R038	A-4
R039	A-3
R042	A-1
R043	A-2
R044	C-4
R045	B-3

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor


C
Q
B E
3 2 1
Q
4 5 6


VS-126
(REC/PB Head Amplifier, Y/C Process, Hi 8 I/O, Electric Volume, Servo/System Control, Signal I/O)
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive, Steady Shot Control)
MI-25
(Mic)
SL-38
(Mecha Control)
MA-237
(Mic Amp)
PJ-70
(PAL Jog)

MA-237 (MIC AMP) SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
MA-237 BOARD
no mark : CAMERA REC mode
J015
EXT MIC
L017
1mH
2520
C015
100p
SL
L015
1mH :2520
L016
0μH
(B-4)
D015
MA111-TX
LN0015
CH. GND
C017
100p SL
R016
6.8k
R015
6.8k
C020
1000p
:B
C023
0.1
:B
C024
10
TA(A)
C022
0.1
:B
C030 0.047 :B
C029 0.1 :B
C028 0.1 :B
C027 0.047 :B
C035
0.056
:B
R024
4.7k
R028
10k
R031
10k
C040
0.01
:B
C043
0.022
:B
R042
27k
R027
10k
R036
22k
C045
0.022
:B
R034
15k
C037
0.047
:B
R038
33k
(B-4)
IC016
STEREO
MIC AMP
IC016
LA7471M
CN015 7P
(C-1)
MIC L
MIC R
MIC VCC
AU GND
SS GND
SIRCS SIG
SS 4.9V
TO MI-25
BOARD
CN003
(See Page 4-64)
C036
0.047
:B
R033
15k
R037
33k
C044
0.022
:B
R026
10k
R030
10k
C039
0.01
:B
C042
0.022
:B
R035
22k
R023
4.7k
R025
10k
R043
27k
C034
0.056
:B
R017
0
R020
33k
C021
100p
:SL
R018
10k
(B-3)
Q015
AMP
Q015
2SB1218
C018
0.1
:B2125
C019
0.1
:B
R019
33k
R021
6.8k
C031
1
:F2125
(C-4)
IC015
NJM2118
C032
1
:B2125
IC015
MONO MIC
AMP
R022
100
C026
10
TA:A
C033
0.1
:B
R044 100
MONO
09
·SIGNAL PAT
AUDIO
REC
PB

MA-237 (MIC AMP) SCHEMATIC DIAGRAM

MA-237 BOARD

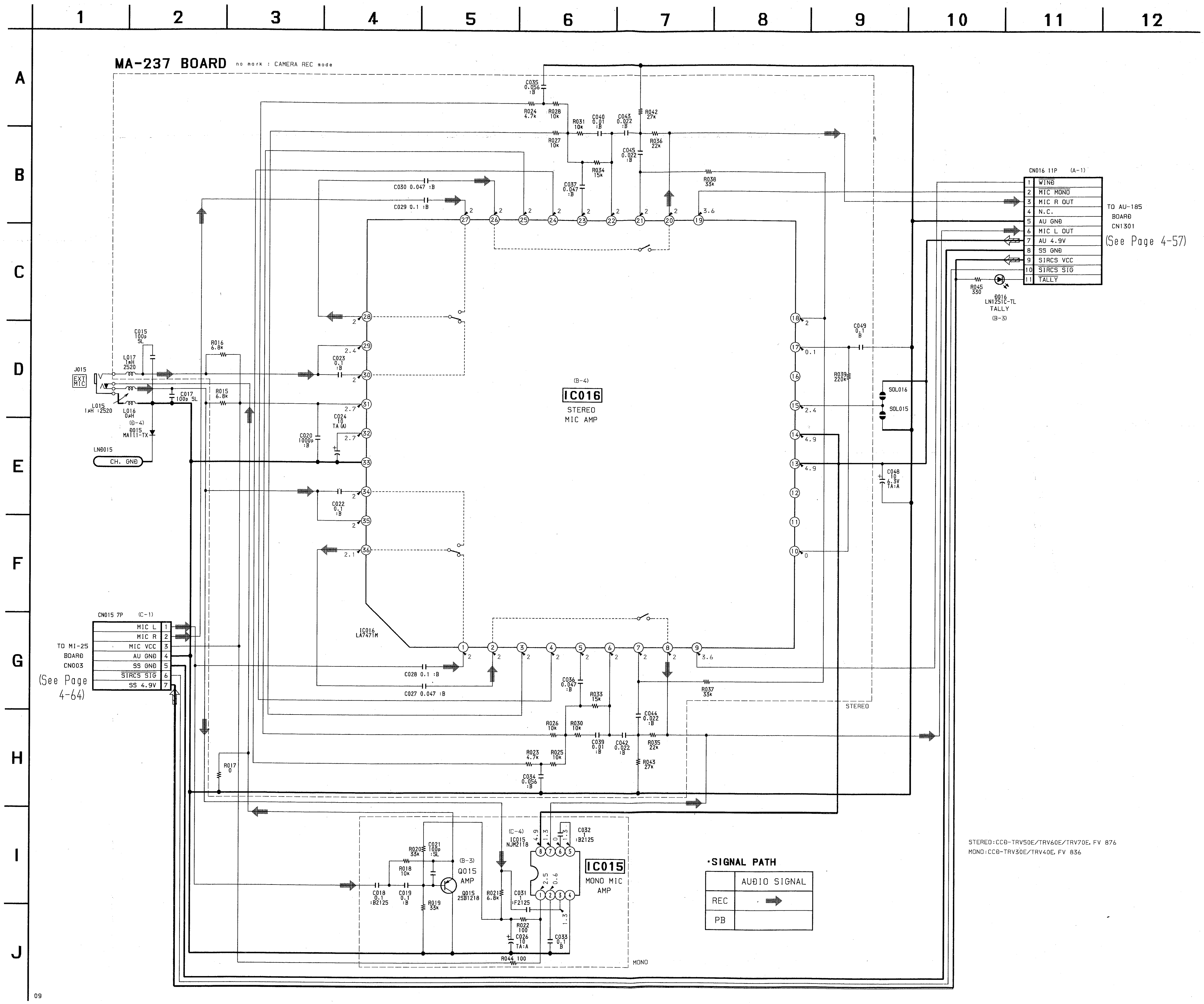
C015	B-1
C017	C-4
C018	B-3
C019	B-3
C020	B-4
C021	C-3
C022	B-4
C023	B-4
C024	B-4
C026	C-4
C027	B-4
C028	B-3
C029	B-4
C030	B-4
C031	C-4
C032	B-4
C033	C-4
C034	B-1
C035	B-1
C036	B-2
C037	B-1
C039	B-2
C040	B-1
C042	A-2
C043	A-1
C044	A-2
C045	A-1
C048	A-3
C049	A-4
CN015	C-1
CN016	A-1
D015	D-4
D016	B-3
IC015	C-4
IC016	B-4
J015	C-2
L015	D-4
L016	D-4
L017	C-1
Q015	B-3
R015	C-4
R016	C-1
R017	C-3
R018	B-3
R019	B-4
R020	C-3
R021	C-4
R022	C-4
R023	B-1
R024	B-1
R025	B-1
R026	B-2
R027	B-1
R028	B-1
R030	B-2
R031	B-1
R033	B-2
R034	B-1
R035	A-2
R036	A-1
R037	A-3
R038	A-4
R039	A-3
R042	A-1
R043	A-2
R044	C-4
R045	B-3

rive)

rive)

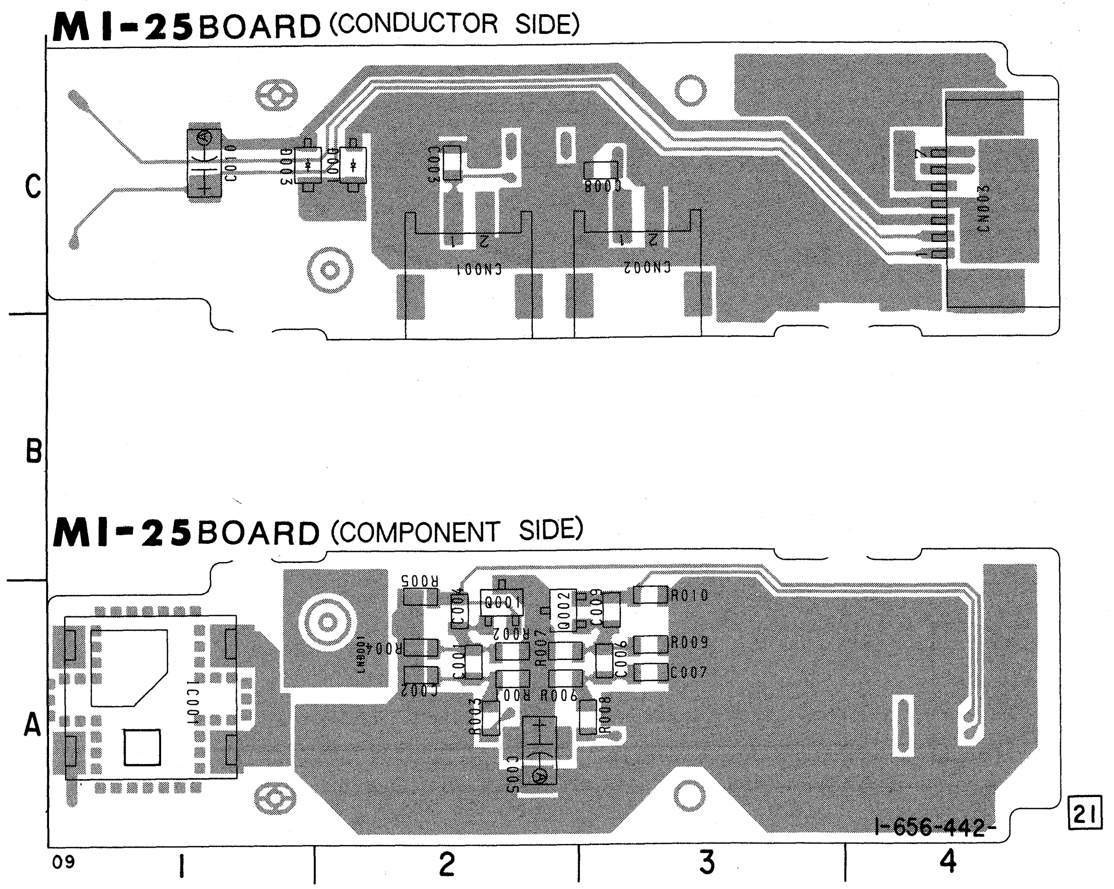
a, Lens Drive,
Shot Control

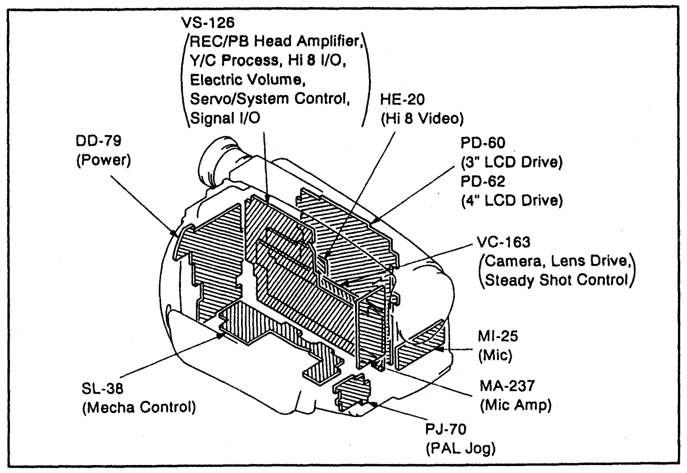
np)


1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
I
J
MA-237 BOARD
no mark : CAMERA REC mode
IC016
STEREO
MIC AMP
IC016
LA4741M
IC015
MONO MIC
AMP
IC015
NJM2118
Q015
AMP
Q015
2SB1218
J015
EXT
MIC
LN0015
CH. GND
D015
MA111-TX
CN015 7P (C-1)
1 MIC L
2 MIC R
3 MIC VCC
4 AU GND
5 SS GND
6 SIRCS SIG
7 SS 4.9V
TO MI-25
BOARD
CN003
(See Page
4-64)
CN016 11P (A-1)
1 WIND
2 MIC MONO
3 MIC R OUT
4 N.C.
5 AU GND
6 MIC L OUT
7 AU 4.9V
8 SS GND
9 SIRCS VCC
10 SIRCS SIG
11 TALLY
TO AU-185
BOARD
CN1301
(See Page 4-57)
R045
330
D016
LN1251C-TL
TALLY
(B-3)
SOL016
SOL015
STEREO
MONO
·SIGNAL PATH
AUDIO SIGNAL
REC
PB
09

STEREO:CCD-TRV50E/TRV60E/TRV70E, FV 876
MONO:CCD-TRV30E/TRV40E, FV 836

MI-25 (MIC) PRINTED WIRING BOARD

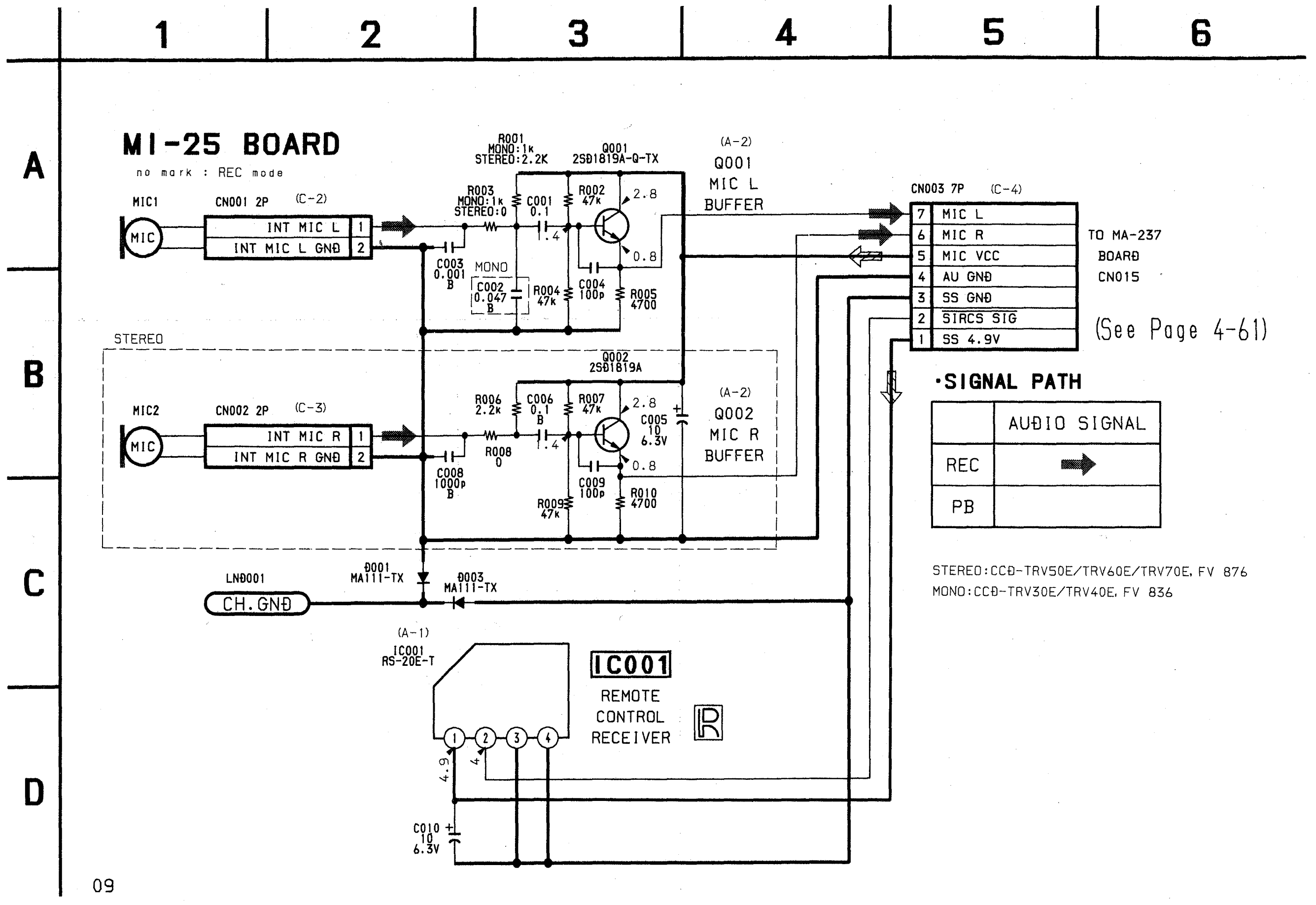

MI-25 BOARD (CONDUCTOR SIDE)
MI-25 BOARD (COMPONENT SIDE)
C
B
A
C010
D003
D001
C003
R003
CN001
CN002
CN003
IC001
LND001
Q001
Q002
R001
R002
R004
R005
R006
R007
R008
R009
R010
C001
C002
C004
C005
C006
C007
C008
C009
1-656-442-
21
09
1
2
3
4


VS-126
(REC/PB Head Amplifier, Y/C Process, Hi 8 I/O, Electric Volume, Servo/System Control, Signal I/O)
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive, Steady Shot Control)
MI-25
(Mic)
MA-237
(Mic Amp)
SL-38
(Mecha Control)
PJ-70
(PAL Jog)

MI-25 BOARD

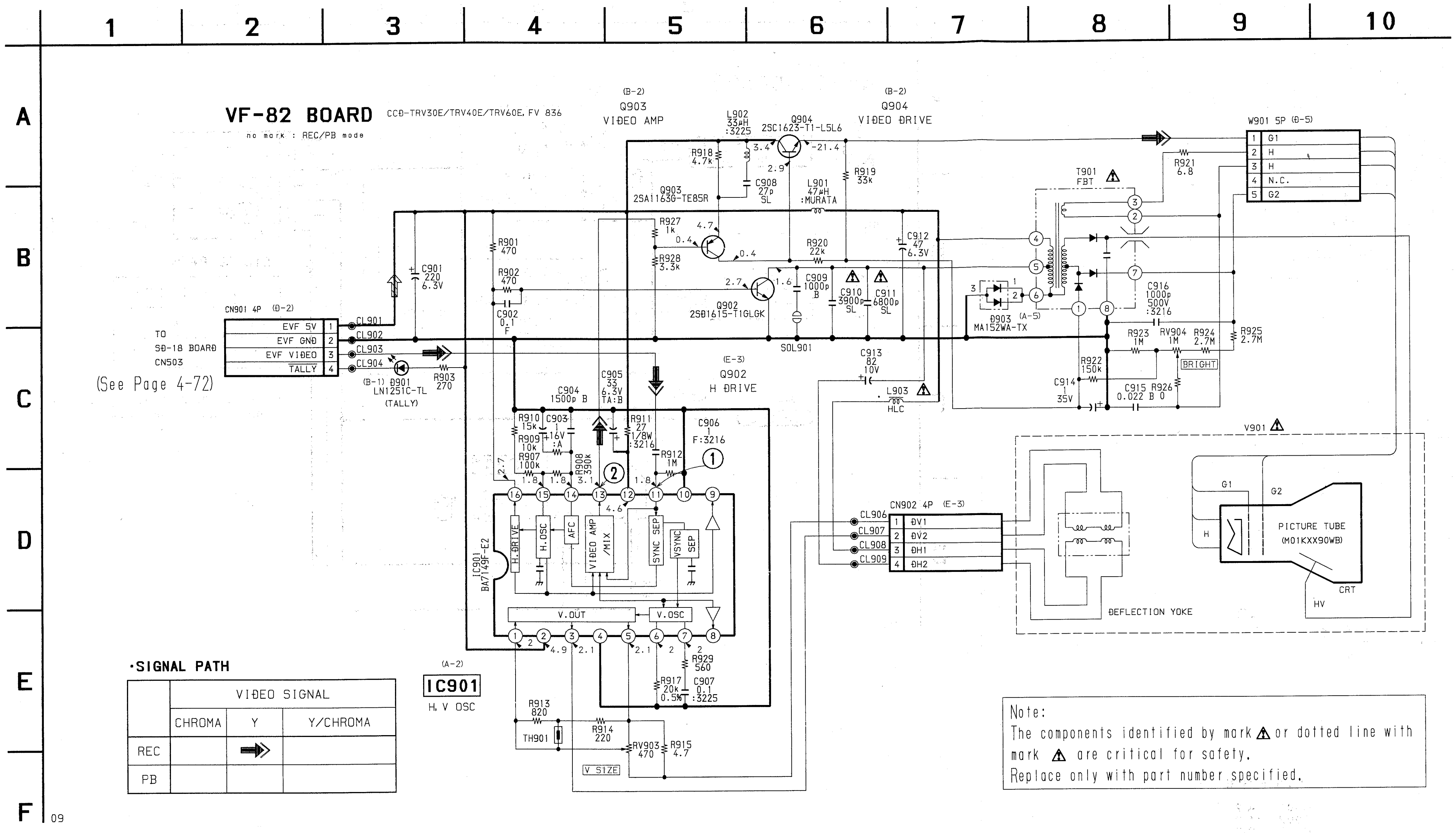
C001	A-2
C002	A-2
C003	C-2
C004	A-2
C005	A-2
C008	C-3
C009	A-3
C010	C-1
CN001	C-2
CN002	C-3
CN003	C-4
D001	C-2
D003	C-1
IC001	A-1
Q001	A-2
Q002	A-2
R001	A-2
R002	A-2
R003	A-2
R004	A-2
R005	A-2
R006	A-2
R007	A-2
R008	A-3
R009	A-3
R010	A-3

MI-25 (MIC) SCHEMATIC DIAGRAM


1
2
3
4
5
6
A
B
C
D
MI-25 BOARD
no mark : REC mode
MIC1
MIC
CN001 2P (C-2)
INT MIC L 1
INT MIC L GND 2
MIC2
MIC
CN002 2P (C-3)
INT MIC R 1
INT MIC R GND 2
STEREO
MONO
R001 MONO:1k STEREO:2.2K
R003 MONO:1k STEREO:0
C001 0.1
R002 47k
Q001 2SD1819A-Q-TX
2.8
.4
0.8
C003 0.001 B
C002 0.047 B
R004 47k
C004 100p
R005 4700
(A-2) Q001 MIC L BUFFER
Q002 2SD1819A
R006 2.2k
C006 0.1 B
R007 47k
C005 10 6.3V
R008 0
C008 1000p B
R009 47k
C009 100p
R010 4700
(A-2) Q002 MIC R BUFFER
LND001
CH.GND
D001 MA111-TX
D003 MA111-TX
(A-1) IC001 RS-20E-T
IC001
REMOTE CONTROL RECEIVER
1 2 3 4
4.9
C010 10 6.3V
CN003 7P (C-4)
7 MIC L
6 MIC R
5 MIC VCC
4 AU GND
3 SS GND
2 SIRCS SIG
1 SS 4.9V
TO MA-237 BOARD CN015
(See Page 4-61)
•SIGNAL PATH
AUDIO SIGNAL
REC
PB
STEREO:CCD-TRV50E/TRV60E/TRV70E, FV 876
MONO:CCD-TRV30E/TRV40E, FV 836
09

VF-82 (VIEWFINDER for 3") SCHEMATIC DIAGRAM

— Ref. No. VF-82 BOARD: 3000 series —

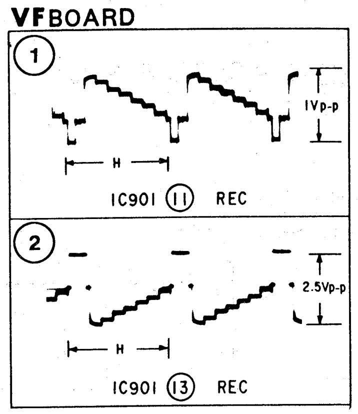

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
VF-82 BOARD CCD-TRV30E/TRV40E/TRV60E, FV 836
no mark : REC/PB mode
(B-2) Q903 VIDEO AMP
(B-2) Q904 VIDEO DRIVE
L902 33μH :3225
Q904 2SC1623-T1-L5L6
R918 4.7k
Q903 2SA1163G-TE85R
C908 27p SL
L901 47μH :MURATA
R919 33k
R927 1k
R928 3.3k
R920 22k
C912 47 6.3V
C909 1000p B
C910 3900p SL
C911 6800p SL
Q902 2SD1615-T1GLGK
SOL901
R901 470
R902 470
C902 0.1 F
C901 220 6.3V
CN901 4P (B-2)
TO SB-18 BOARD CN503
EVF 5V
EVF GND
EVF VIDEO
TALLY
CL901
CL902
CL903
CL904
(See Page 4-72)
(B-1) D901 LN1251C-TL (TALLY)
R903 270
C904 1500p B
C905 33 6.3V TA:B
(E-3) Q902 H DRIVE
C913 82 10V
L903 HLC
R910 15k
C903 1 16V :A
R909 10k
R907 100k
R908 390k
R911 27 1/8W :3216
R912 1M
C906 1 F:3216
H.DRIVE
H.OSC
AFC
VIDEO AMP /MIX
SYNC SEP
VSYNC SEP
V.OUT
V.OSC
IC901 BA7149F-E2
R929 560
R917 20k 0.5W
C907 0.1 :3225
R913 820
TH901
R914 220
RV903 470
R915 4.7
V SIZE
(A-2) IC901 H, V OSC
T901 FBT
W901 5P (B-5)
G1
H
H
N.C.
G2
R921 6.8
D903 (A-5) MA152WA-TX
C916 1000p 500V :3216
R923 1M
RV904 1M
R924 2.7M
R925 2.7M
BRIGHT
R922 150k
C914 1 35V
C915 0.022 B
R926 0
V901
CN902 4P (E-3)
CL906
CL907
CL908
CL909
DV1
DV2
DH1
DH2
DEFLECTION YOKE
G1
G2
PICTURE TUBE (M01KXX90WB)
CRT
HV
09

·SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC		➡	
PB			

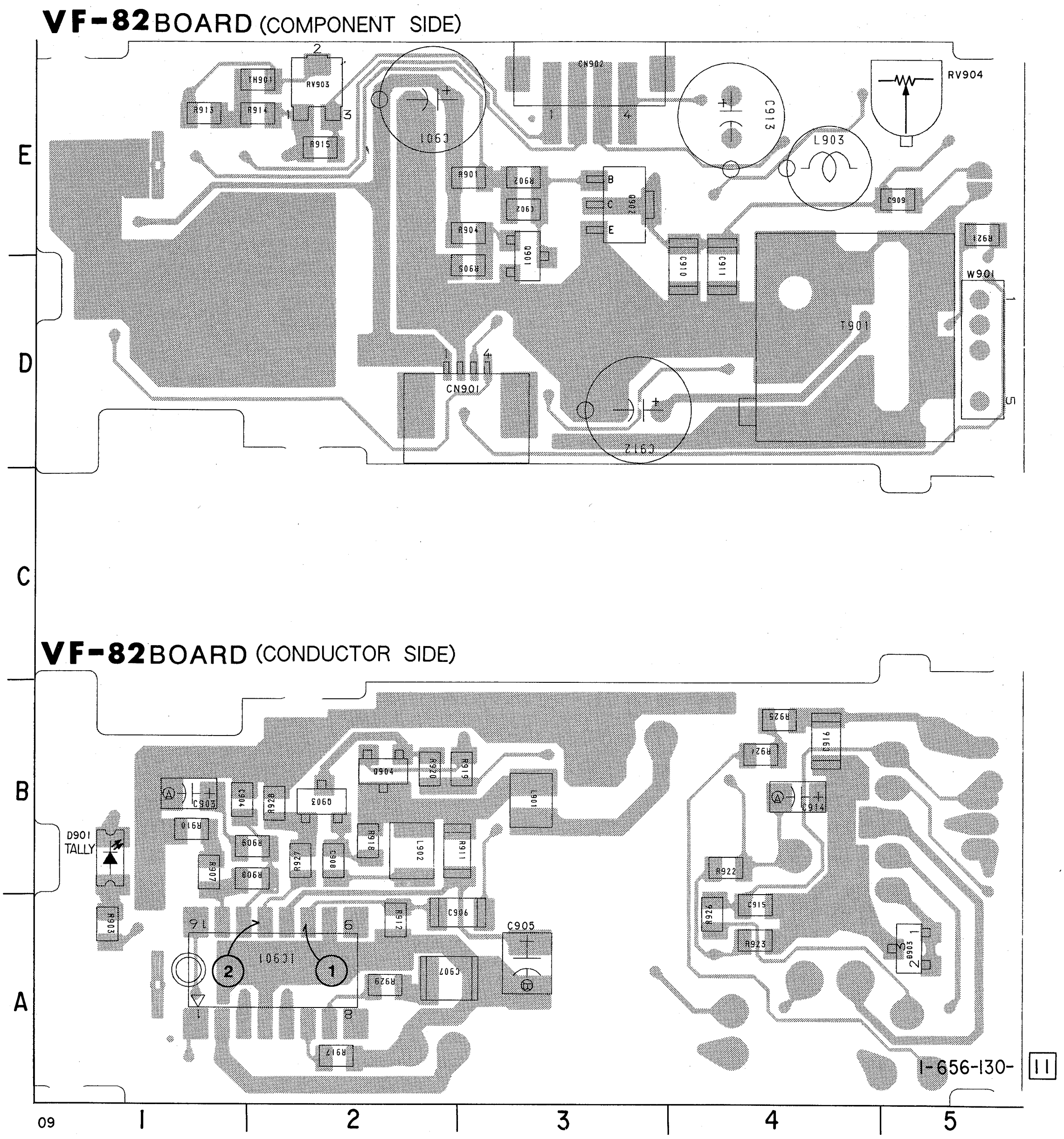
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

VF BOARD



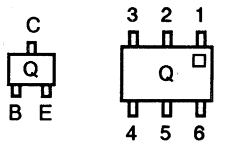
VF-82 (VIEWFINDER for 3") PRINTED WIRING BOARD

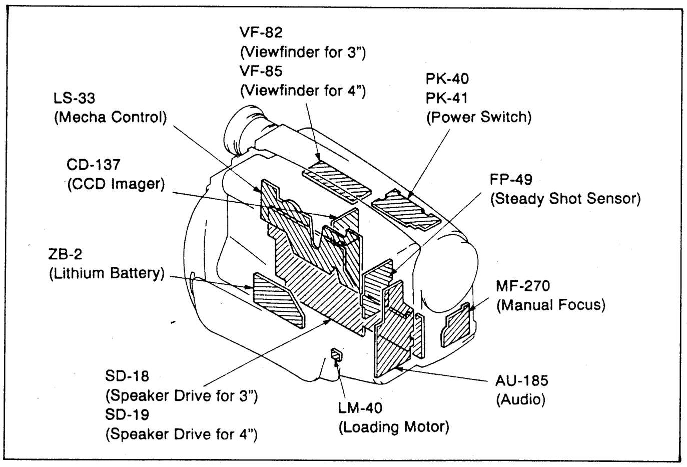
— Ref. No. VF-82 BOARD: 3000 series —


VF-82 BOARD (COMPONENT SIDE)
E
D
C
VF-82 BOARD (CONDUCTOR SIDE)
B
A
TH901
RV903
R913
R914
R915
IC903
CN902
C913
L903
RV904
R901
R902
R903
Q902
B
C
E
R904
R905
Q901
C910
C911
C909
R921
W901
T901
CN901
C912
D901
TALLY
C903
C904
R928
Q903
Q904
R920
R919
L901
R918
R910
R908
R909
R927
C908
L902
R911
R907
R903
R912
C906
C905
IC901
R929
C907
R917
R925
R924
C916
C914
R922
R926
C915
R923
D903
1-656-130-11
09
1
2
3
4
5

VF-82 BOARD	
C901	E-2
C902	E-3
C903	B-1
C904	B-1
C905	A-3
C906	A-2
C907	A-2
C908	B-2
C909	E-5
C910	D-4
C911	D-4
C912	D-3
C913	E-4
C914	B-4
C915	A-4
C916	B-4
CN901	D-2
CN902	E-3
D901	B-1
D903	A-5
IC901	A-2
L901	B-3
L902	B-2
L903	E-4
Q902	E-3
Q903	B-2
Q904	B-2
R901	E-3
R902	E-3
R903	A-1
R907	B-1
R908	B-2
R909	B-2
R910	B-1
R911	B-3
R912	A-2
R913	E-1
R914	E-2
R915	E-2
R917	A-2
R918	B-2
R919	B-3
R920	B-2
R921	E-5
R922	B-4
R923	A-4
R924	B-4
R925	B-4
R926	A-4
R927	B-2
R928	B-2
R929	A-2
RV903	E-2
RV904	E-5
T901	D-4
TH901	E-2
W901	D-5

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor

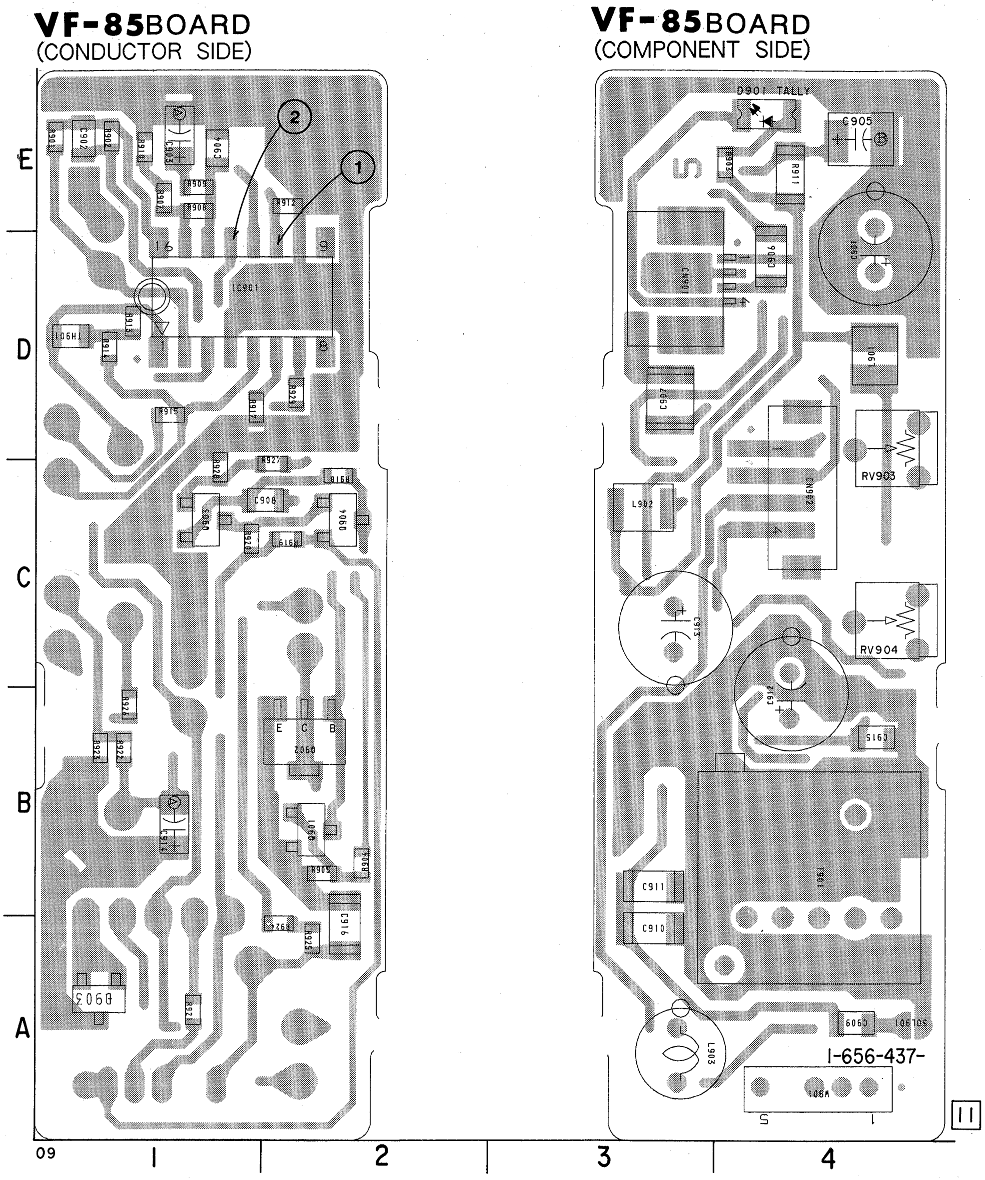

C
Q
B E
3 2 1
Q
4 5 6

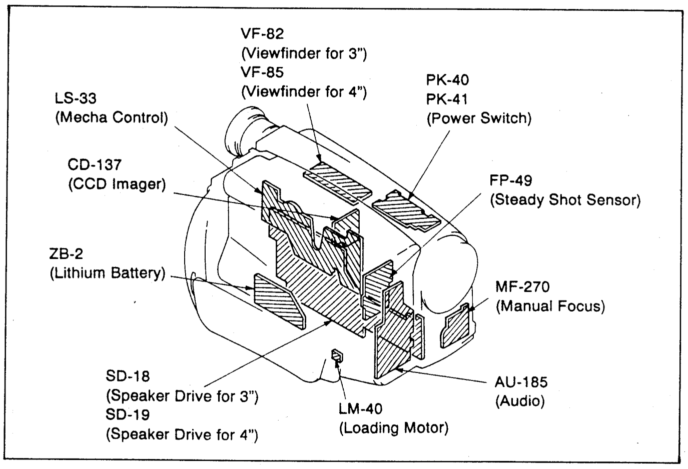

VF-82
(Viewfinder for 3")
VF-85
(Viewfinder for 4")
PK-40
PK-41
(Power Switch)
LS-33
(Mecha Control)
CD-137
(CCD Imager)
FP-49
(Steady Shot Sensor)
ZB-2
(Lithium Battery)
MF-270
(Manual Focus)
SD-18
(Speaker Drive for 3")
SD-19
(Speaker Drive for 4")
AU-185
(Audio)
LM-40
(Loading Motor)

VF-85 (VIEWFINDER for 4") PRINTED WIRING BOARD

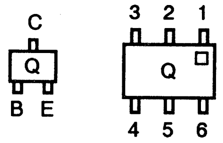
— Ref. No. VF-85 BOARD: 4000 series —

VF-85 BOARD	
C901	D-4
C902	E-1
C903	E-1
C904	E-1
C905	E-4
C906	D-4
C907	D-3
C908	C-1
C909	A-4
C910	A-3
C911	B-3
C912	B-4
C913	C-3
C914	B-1
C915	B-4
C916	A-2
CN901	D-3
CN902	C-4
D901	E-4
D903	A-1
IC901	D-1
L901	D-4
L902	C-3
L903	A-3
Q902	B-2
Q903	C-1
Q904	C-2
R901	E-1
R902	E-1
R903	E-4
R907	E-1
R908	E-1
R909	E-1
R910	E-1
R911	E-4
R912	E-2
R913	D-1
R914	D-1
R915	D-1
R917	D-1
R918	C-2
R919	C-2
R920	C-1
R921	A-1
R922	B-1
R923	B-1
R924	A-2
R925	A-2
R926	B-1
R927	C-2
R928	C-1
R929	D-2
RV903	C-4
RV904	C-4
T901	B-4
TH901	D-1
W901	A-4


VF-85BOARD
(CONDUCTOR SIDE)
VF-85BOARD
(COMPONENT SIDE)
E
D
C
B
A
09
1
2
3
4
①
②
IC901
16
9
1
8
D901 TALLY
C905
R911
R903
CN901
C906
L901
C907
L902
CN902
RV903
RV904
C913
C912
C915
T901
C911
C910
C909
SOL901
L903
W901
1-656-437-
11

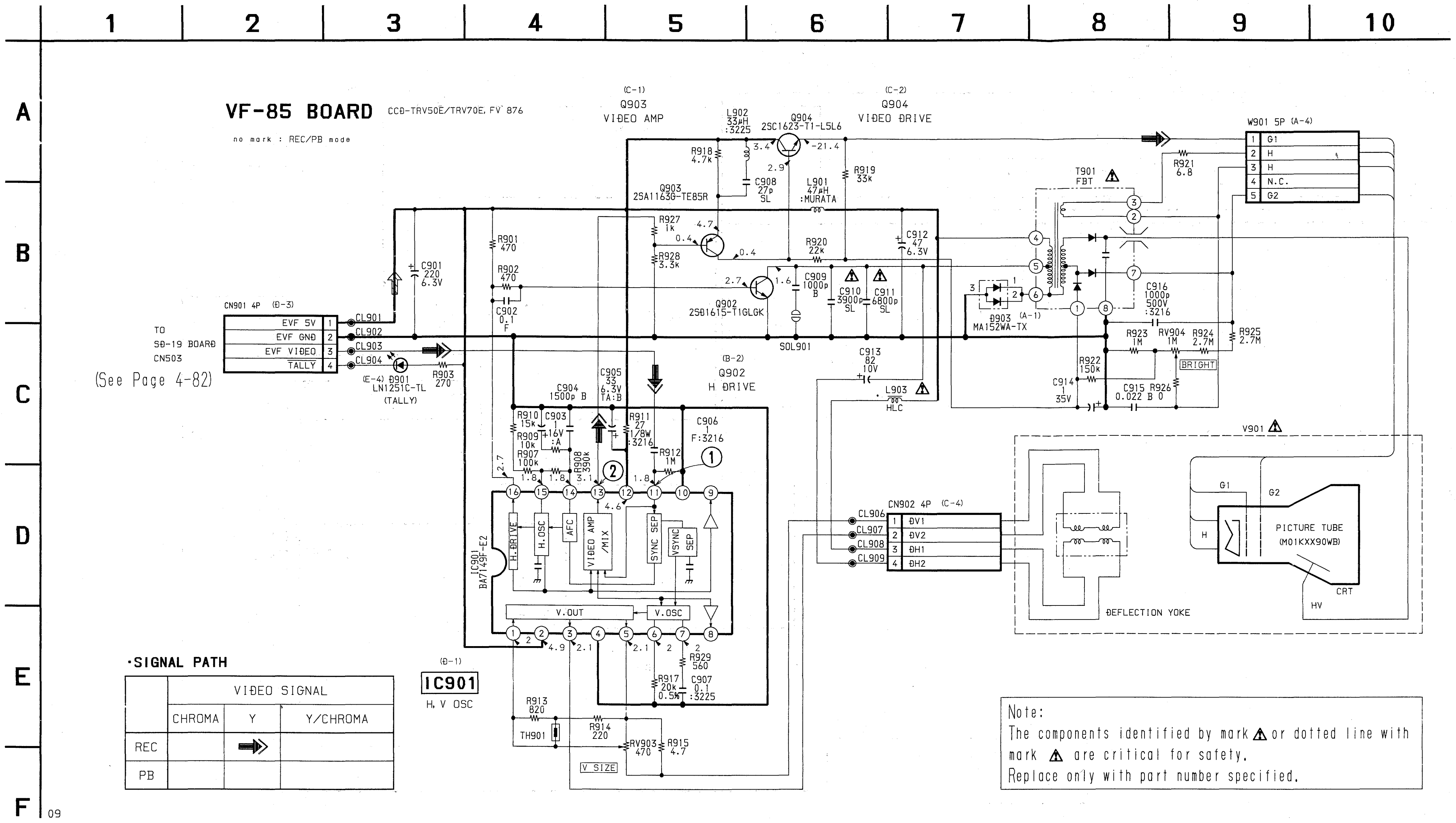

VF-82
(Viewfinder for 3")
VF-85
(Viewfinder for 4")
PK-40
PK-41
(Power Switch)
LS-33
(Mecha Control)
CD-137
(CCD Imager)
FP-49
(Steady Shot Sensor)
ZB-2
(Lithium Battery)
MF-270
(Manual Focus)
SD-18
(Speaker Drive for 3")
SD-19
(Speaker Drive for 4")
LM-40
(Loading Motor)
AU-185
(Audio)

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor


C
B E
Q
3 2 1
Q
4 5 6

VF-85 (VIEWFINDER for 4") SCHEMATIC DIAGRAM

— Ref. No. VF-85 BOARD: 4000 series —

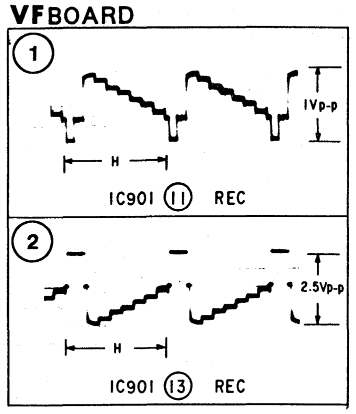

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
09
VF-85 BOARD CCD-TRV50E/TRV70E, FV 876
no mark : REC/PB mode
(C-1) Q903 VIDEO AMP
(C-2) Q904 VIDEO DRIVE
L902 33μH :3225
Q904 2SC1623-T1-L5L6
R918 4.7k
C908 27p SL
Q903 2SA1163G-TE85R
L901 47μH :MURATA
R919 33k
R927 1k
R928 3.3k
R920 22k
C912 47 6.3V
Q902 2SD1615-T1GLGK
C909 1000p B
C910 3900p SL
C911 6800p SL
SOL901
R901 470
R902 470
C901 220 6.3V
C902 0.1 F
CN901 4P (D-3)
EVF 5V
EVF GND
EVF VIDEO
TALLY
CL901
CL902
CL903
CL904
TO SB-19 BOARD CN503
(See Page 4-82)
(E-4) D901 LN1251C-TL (TALLY)
R903 270
(B-2) Q902 H DRIVE
C904 1500p B
C905 33 6.3V TA:B
R910 15k
C903 1 16V :A
R909 10k
R907 100k
R908 390k
R911 27 1/8W :3216
C906 1 F:3216
R912 1M
C913 82 10V
L903 HLC
W901 5P (A-4)
G1
H
H
N.C.
G2
R921 6.8
T901 FBT
D903 (A-1) MA152WA-TX
C916 1000p 500V :3216
R923 1M
RV904 1M
R924 2.7M
R925 2.7M
BRIGHT
R922 150k
C914 1 35V
C915 0.022 B
R926 0
V901
CN902 4P (C-4)
CL906
CL907
CL908
CL909
DV1
DV2
DH1
DH2
DEFLECTION YOKE
G1
G2
H
PICTURE TUBE (M01KXX90WB)
CRT
HV
IC901 BA7149F-E2
H.DRIVE
H.OSC
AFC
VIDEO AMP /MIX
SYNC SEP
VSYNC SEP
V.OUT
V.OSC
(D-1) IC901 H, V OSC
R929 560
R917 20k
C907 0.1 :3225
R913 820
TH901
R914 220
RV903 470
R915 4.7
V SIZE

·SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC		⇛	
PB			

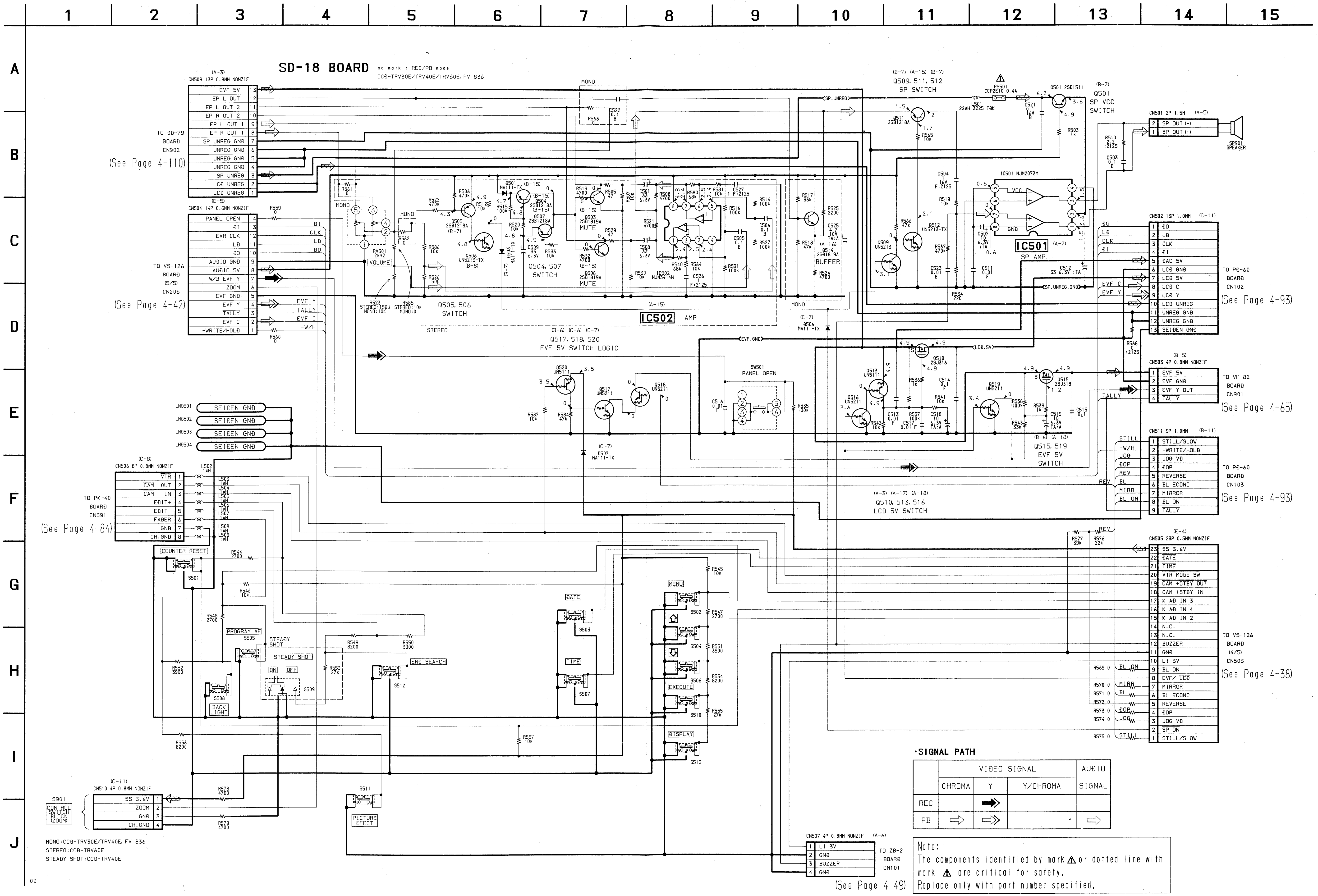
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

VF BOARD


①
IVp-p
H
IC901 ⑪ REC
②
2.5Vp-p
H
IC901 ⑬ REC

SD-18 (SPEAKER DRIVE for 3") SCHEMATIC DIAGRAM

— Ref. No. SD-18 BOARD: 5000 series —


SD-18 BOARD
no mark : REC/PB mode
CCD-TRV30E/TRV40E/TRV60E, FV 836
CN509 13P 0.8MM NONZIF
EVF 5V
EP L OUT
EP L OUT 2
EP R OUT 2
EP L OUT 1
EP R OUT 1
SP UNREG GND
UNREG GND
SP UNREG
LCD UNREG
TO DD-79 BOARD CN902
(See Page 4-110)
CN504 14P 0.5MM NONZIF
PANEL OPEN
EVR CLK
AUDIO GND
AUDIO 5V
W/B EVF Y
ZOOM
EVF GND
EVF Y
TALLY
EVF C
-WRITE/HOLD
TO VS-126 BOARD (5/5) CN206
(See Page 4-42)
RV501 VOLUME
Q505, 506 SWITCH
Q504, 507 SWITCH
Q503 MUTE
Q508 MUTE
IC502 AMP
Q514 BUFFER
Q506 MA111-TX
Q517, 518, 520 EVF 5V SWITCH LOGIC
Q509, 511, 512 SP SWITCH
PS501 CCP2E10 0.4A
Q501 2SD1511 SP VCC SWITCH
IC501 NJM2073M
IC501 SP AMP
CN501 2P 1.5M
SP OUT (-)
SP OUT (+)
SP901 SPEAKER
CN502 13P 1.0MM
DD
LD
CLK
DI
DAC 5V
LCD GND
LCD 5V
LCD C
LCD Y
LCD UNREG
UNREG GND
SEIDEN GND
TO PD-60 BOARD CN102
(See Page 4-93)
SW501 PANEL OPEN
Q510, 513, 516 LCD 5V SWITCH
Q515, 519 EVF 5V SWITCH
CN503 4P 0.8MM NONZIF
EVF 5V
EVF GND
EVF Y OUT
TALLY
TO VF-82 BOARD CN901
(See Page 4-65)
CN511 9P 1.0MM
STILL/SLOW
-WRITE/HOLD
JOG VD
DOP
REVERSE
BL ECONO
MIRROR
BL ON
TALLY
TO PD-60 BOARD CN103
(See Page 4-93)
LND501 SEIDEN GND
LND502 SEIDEN GND
LND503 SEIDEN GND
LND504 SEIDEN GND
CN506 8P 0.8MM NONZIF
VTR
CAM OUT
CAM IN
EDIT+
EDIT-
FADER
GND
CH.GND
TO PK-40 BOARD CN591
(See Page 4-84)
COUNTER RESET S501
PROGRAM AE S505
STEADY SHOT S509
ON OFF
BACK LIGHT S508
END SEARCH S512
DATE S503
TIME S507
MENU S502
S504
EXECUTE S506
S510
DISPLAY S513
PICTURE EFECT S511
CN505 23P 0.5MM NONZIF
SS 3.6V
DATE
TIME
VTR MODE SW
CAM +STBY OUT
CAM +STBY IN
K AD IN 3
K AD IN 4
K AD IN 2
N.C.
BUZZER
GND
LI 3V
BL ON
EVF/ LCD
MIRROR
BL ECONO
REVERSE
DOP
JOG VD
SP ON
STILL/SLOW
TO VS-126 BOARD (4/5) CN503
(See Page 4-38)
S901 CONTROL SWITCH BLOCK (ZOOM)
CN510 4P 0.8MM NONZIF
SS 3.6V
ZOOM
GND
CH.GND
CN507 4P 0.8MM NONZIF
LI 3V
GND
BUZZER
GND
TO ZB-2 BOARD CN101
(See Page 4-49)
MONO:CCD-TRV30E/TRV40E, FV 836
STEREO:CCD-TRV60E
STEADY SHOT:CCD-TRV40E
09

·SIGNAL PATH

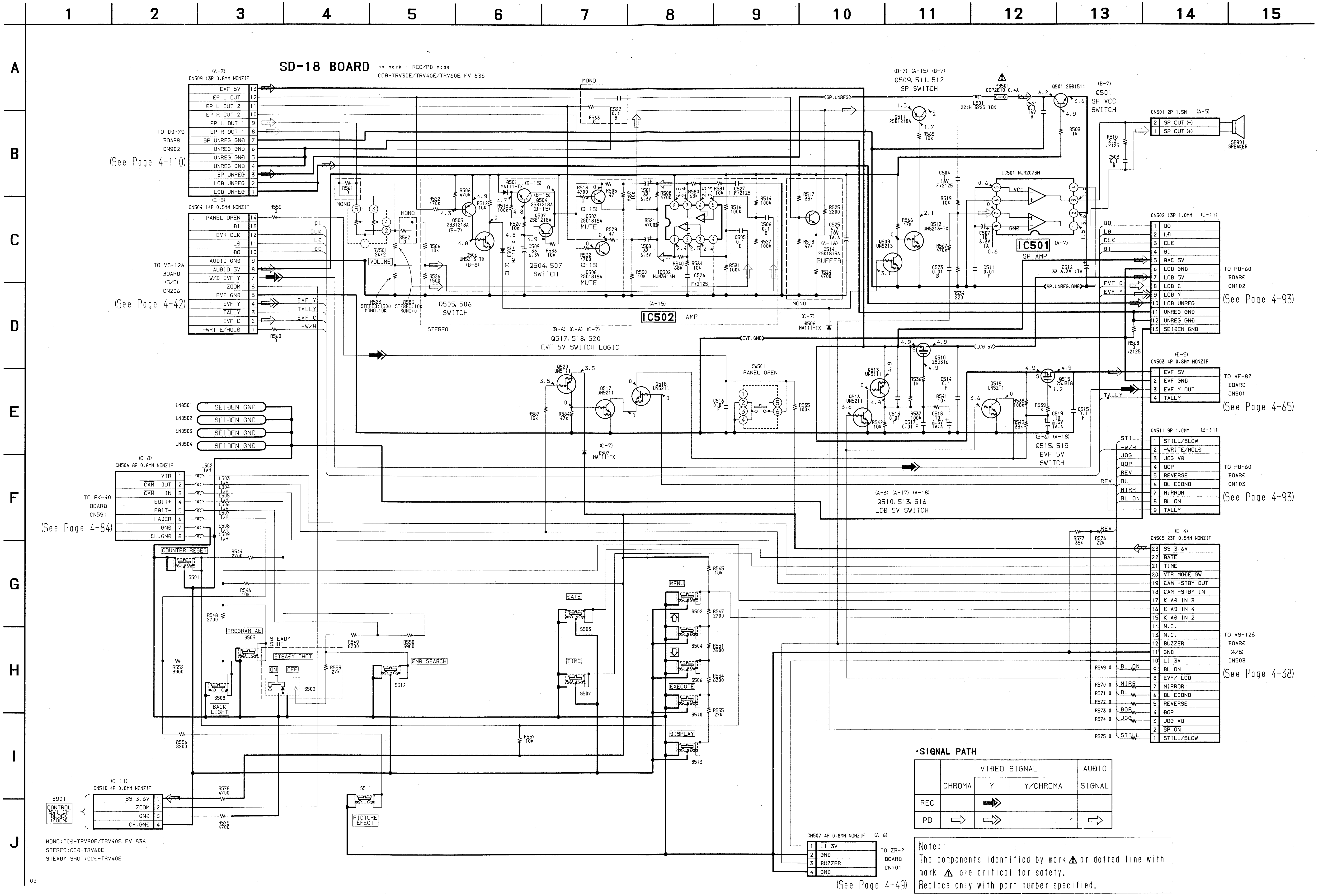
	VIDEO SIGNAL			AUDIO
	CHROMA	Y	Y/CHROMA	SIGNAL
REC		➡		
PB	⇨	⇨		⇨

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

SP DRIVE (for 3")

SD-18 (SPEAKER DRIVE for 3") SCHEMATIC DIAGRAM

— Ref. No. SD-18 BOARD: 5000 series —


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
SD-18 BOARD
no mark : REC/PB mode
CCD-TRV30E/TRV40E/TRV60E, FV 836
(A-3)
CN509 13P 0.8MM NONZIF
EVF 5V 13
EP L OUT 12
EP L OUT 2 11
EP R OUT 2 10
EP L OUT 1 9
EP R OUT 1 8
SP UNREG GND 7
UNREG GND 6
UNREG GND 5
UNREG GND 4
SP UNREG 3
LCD UNREG 2
LCD UNREG 1
TO DD-79
BOARD
CN902
(See Page 4-110)
(E-5)
CN504 14P 0.5MM NONZIF
PANEL OPEN 14
DI 13
EVR CLK 12
LD 11
DO 10
AUDIO GND 9
AUDIO 5V 8
W/B EVF Y 7
ZOOM 6
EVF GND 5
EVF Y 4
TALLY 3
EVF C 2
-WRITE/HOLD 1
TO VS-126
BOARD
(S/S)
CN206
(See Page 4-42)
MONO
STEREO
RV501
VOLUME
Q505, 506
SWITCH
Q504, 507
SWITCH
MUTE
IC502
AMP
NJM3414M
Q506
MA111-TX
BUFFER
Q514
2SD1819A
(B-7) (A-15) (B-7)
Q509, 511, 512
SP SWITCH
PS501
CCP2E10 0.4A
Q501 2SD1511
Q501
SP VCC
SWITCH
IC501 NJM2073M
IC501
SP AMP
CN501 2P 1.5M
SP OUT (-) 2
SP OUT (+) 1
SP901
SPEAKER
CN502 13P 1.0MM
DO 1
LD 2
CLK 3
DI 4
DAC 5V 5
LCD GND 6
LCD 5V 7
LCD C 8
LCD Y 9
LCD UNREG 10
UNREG GND 11
UNREG GND 12
SEIDEN GND 13
TO PD-60
BOARD
CN102
(See Page 4-93)
(B-6) (C-6) (C-7)
Q517, 518, 520
EVF 5V SWITCH LOGIC
SW501
PANEL OPEN
Q510
2SJ316
Q515
2SJ318
CN503 4P 0.8MM NONZIF
EVF 5V 1
EVF GND 2
EVF Y OUT 3
TALLY 4
TO VF-82
BOARD
CN901
(See Page 4-65)
(B-6) (A-18)
Q515, 519
EVF 5V
SWITCH
(A-3) (A-17) (A-18)
Q510, 513, 516
LCD 5V SWITCH
LND501 SEIDEN GND
LND502 SEIDEN GND
LND503 SEIDEN GND
LND504 SEIDEN GND
Q507
MA111-TX
(C-8)
CN506 8P 0.8MM NONZIF
VTR 1
CAM OUT 2
CAM IN 3
EDIT+ 4
EDIT- 5
FADER 6
GND 7
CH.GND 8
TO PK-40
BOARD
CN591
(See Page 4-84)
CN511 9P 1.0MM
STILL/SLOW 1
-WRITE/HOLD 2
JOG VD 3
DOP 4
REVERSE 5
BL ECONO 6
MIRROR 7
BL ON 8
TALLY 9
TO PD-60
BOARD
CN103
(See Page 4-93)
(E-4)
CN505 23P 0.5MM NONZIF
SS 3.6V 23
DATE 22
TIME 21
VTR MODE SW 20
CAM +STBY OUT 19
CAM +STBY IN 18
K AD IN 3 17
K AD IN 4 16
K AD IN 2 15
N.C. 14
N.C. 13
BUZZER 12
GND 11
LI 3V 10
BL ON 9
EVF/ LCD 8
MIRROR 7
BL ECONO 6
REVERSE 5
DOP 4
JOG VD 3
SP ON 2
STILL/SLOW 1
TO VS-126
BOARD
(4/5)
CN503
(See Page 4-38)
COUNTER RESET
S501
PROGRAM AE
S505
STEADY
SHOT
STEADY SHOT
ON
OFF
S509
END SEARCH
S512
BACK
LIGHT
S508
DATE
S503
TIME
S507
MENU
S502
S504
EXECUTE
S506
S510
DISPLAY
S513
S511
PICTURE
EFECT
S901
CONTROL
SWITCH
BLOCK
(ZOOM)
(C-11)
CN510 4P 0.8MM NONZIF
SS 3.6V 1
ZOOM 2
GND 3
CH.GND 4
CN507 4P 0.8MM NONZIF
LI 3V 1
GND 2
BUZZER 3
GND 4
TO ZB-2
BOARD
CN101
(See Page 4-49)
MONO:CCD-TRV30E/TRV40E, FV 836
STEREO:CCD-TRV60E
STEADY SHOT:CCD-TRV40E
09

·SIGNAL PATH

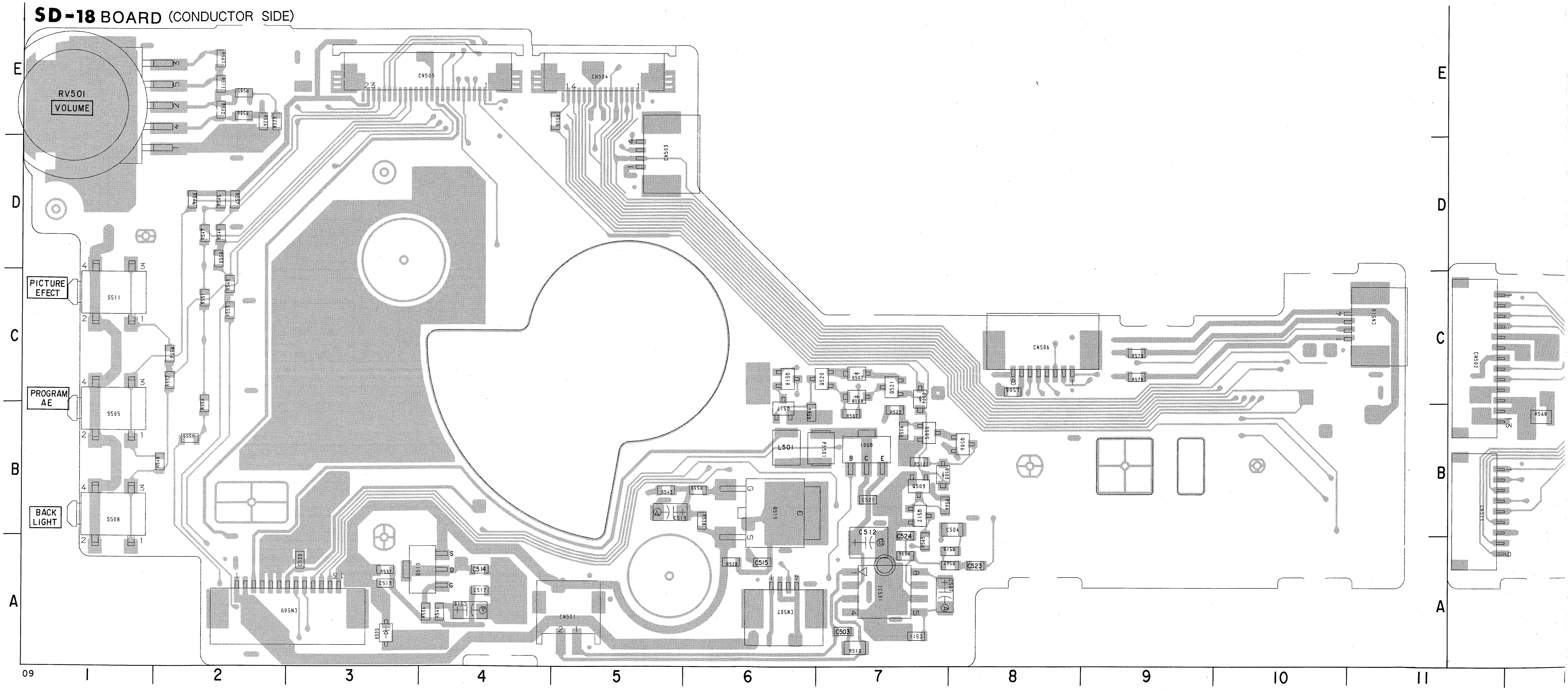
	VIDEO SIGNAL			AUDIO
	CHROMA	Y	Y/CHROMA	SIGNAL
REC		➡		
PB	⇨	⇨		⇨

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

SD-18 (SPEAKER DRIVE for 3") PRINTED WIRING BOARD

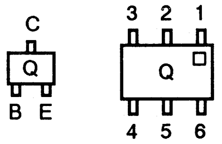
— Ref. No. SD-18 BOARD: 5000 series —

SD-18 BOARD (CONDUCTOR SIDE)



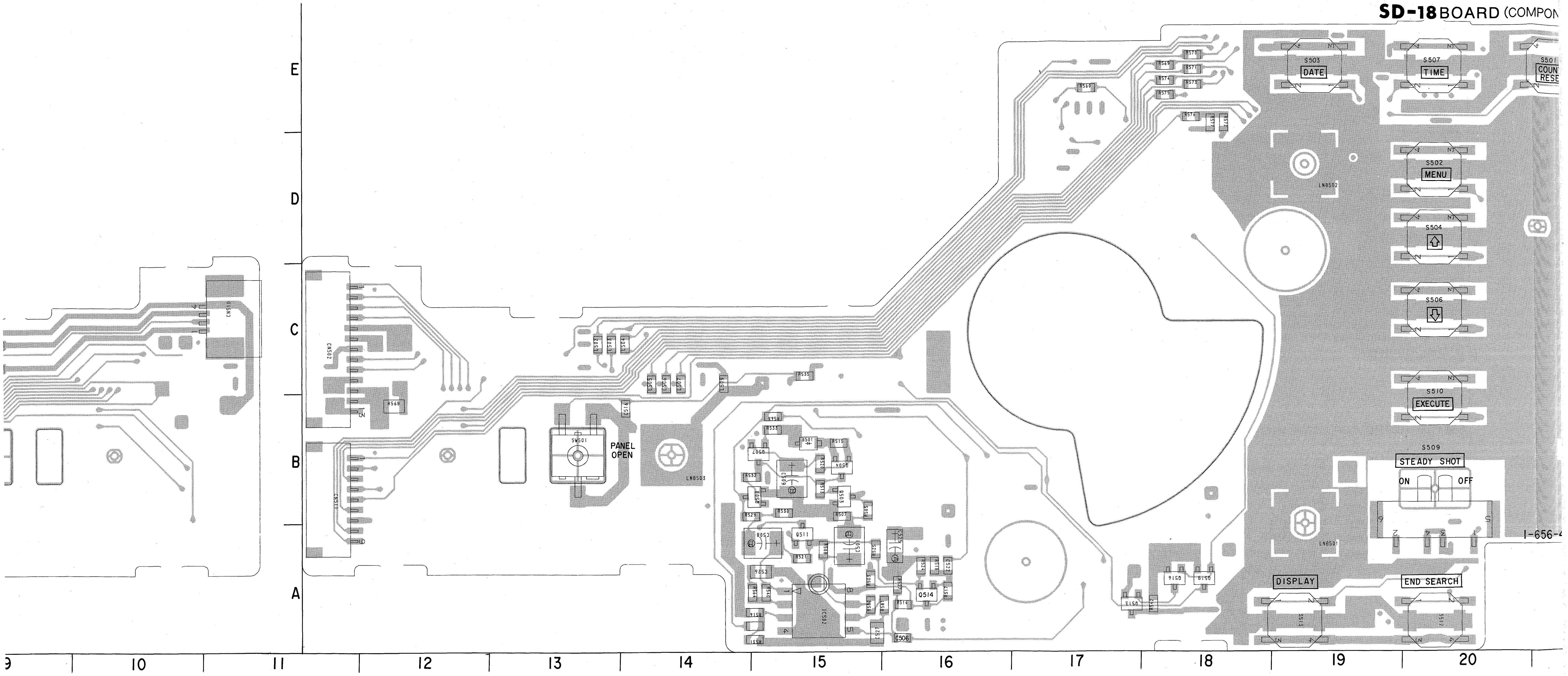
RV501
VOLUME
PICTURE EFECT
S511
PROGRAM AE
S505
BACK LIGHT
S508
CN505
CN504
CN503
CN506
CN510
CN502
CN511
CN509
CN501
CN507
L501
Q515
IC501
C512
C524
C504
C523
C503
C514
C515
C517
C521
Q510
R568
R578
R579
E
D
C
B
A
09
1
2
3
4
5
6
7
8
9
10
11

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor



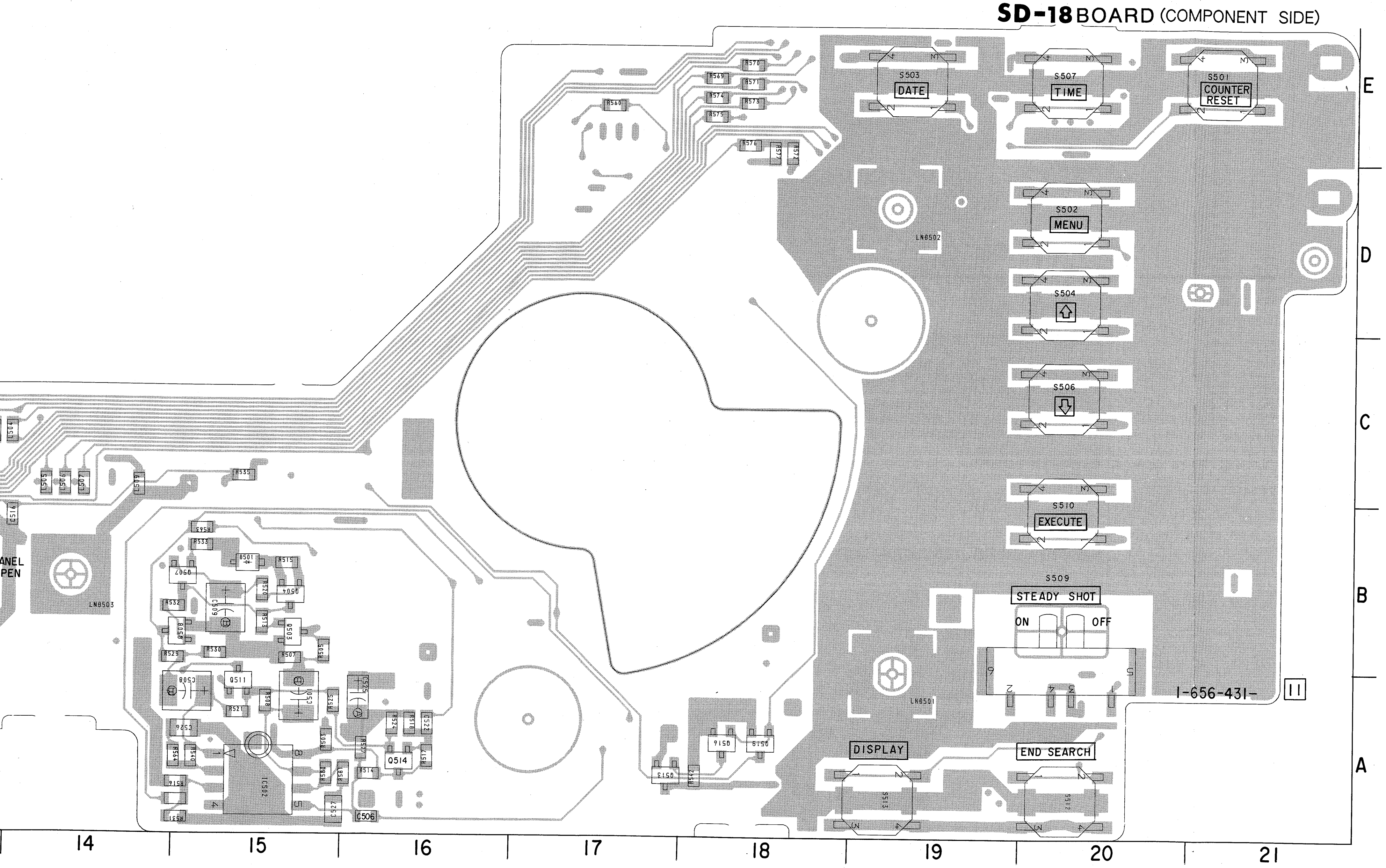
C
Q
B E
3 2 1
Q
4 5 6

SD-18 BOARD (COMPON



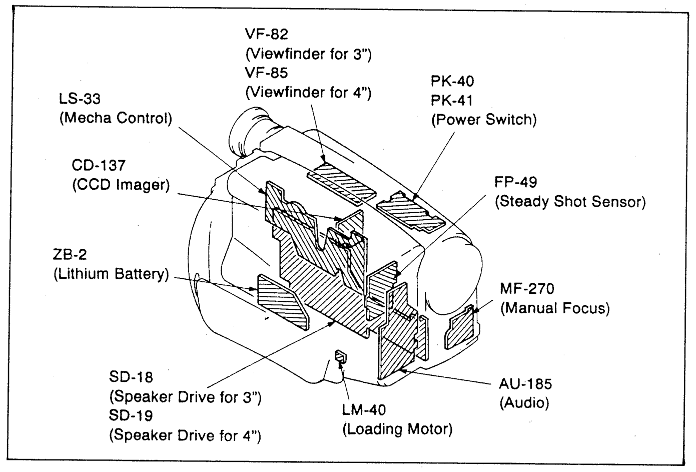
E
D
C
B
A
9
10
11
12
13
14
15
16
17
18
19
20
S503
DATE
S507
TIME
S501
COUNT
RESE
S502
MENU
S504
S506
S510
EXECUTE
S509
STEADY SHOT
ON
OFF
DISPLAY
END SEARCH
S513
S512
SW501
PANEL
OPEN
LN8503
LN8502
LN8501
CN510
CN502
CN511
R568
R569
R570
R571
R572
R573
R574
R575
R576
R535
IC502
Q501
Q503
Q504
Q511
Q514
Q515
Q516
Q518
R515
R520
R527
R529
R530
R531
R532
R533
R534
R521
R507
R514
C506
C508
1-656-4

SD-18 BOARD (COMPONENT SIDE)

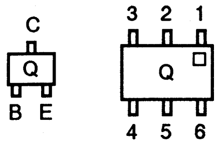

S503
DATE
S507
TIME
S501
COUNTER
RESET
S502
MENU
S504
S506
S510
EXECUTE
S509
STEADY SHOT
ON
OFF
DISPLAY
END SEARCH
S513
S512
LN8501
LN8502
LN8503
ANEL
PEN
1-656-431-
11
IC502
Q514
C506
R535
R560
R569
R570
R571
R573
R574
R575
R576
R577
E
D
C
B
A
14
15
16
17
18
19
20
21

SD-18 BOARD

C501	A-15
C503	A-7
C504	B-8
C506	A-16
C507	A-7
C508	A-15
C509	B-15
C511	A-7
C512	A-7
C513	A-3
C514	A-4
C515	A-6
C516	B-14
C517	A-4
C518	A-4
C519	B-5
C521	B-7
C522	A-16
C523	A-8
C525	A-16
C526	A-15
C527	A-15
CN501	A-5
CN502	C-11
CN503	D-5
CN504	E-5
CN505	E-4
CN506	C-8
CN507	A-6
CN509	A-3
CN510	C-11
CN511	B-11
D503	B-7
D506	C-7
D507	C-7
IC501	A-7
IC502	A-15
L501	B-6
L502	C-13
L503	C-13
L504	C-14
L505	C-14
L506	C-14
L507	C-14
L508	C-8
L509	C-14
PS501	B-7
Q501	B-7
Q503	B-15
Q504	B-15
Q505	B-7
Q506	B-8
Q507	B-15
Q508	B-15
Q509	B-7
Q510	A-3
Q511	A-15
Q512	B-7
Q513	A-17
Q514	A-16
Q515	B-6
Q516	A-18
Q517	B-6
Q518	C-6
Q519	A-18
Q520	C-7
R503	A-15
R505	B-15
R506	B-7
R507	B-15
R508	A-15
R510	A-7
R512	B-7
R513	B-15
R514	A-16
R515	B-15
R516	A-15
R517	A-16
R518	A-16
R519	A-8
R520	B-15
R521	A-15
R522	B-7
R523	E-2
R524	A-16
R525	A-15
R526	E-2
R527	A-16
R529	B-15
R530	B-15
R531	A-15
R532	B-15
R533	B-15
R534	A-7
R535	C-15
R536	A-4
R537	A-3
R538	B-6
R539	B-6
R540	A-15
R541	A-4
R542	A-18
R543	B-5
R544	D-2
R545	D-2
R546	D-2
R547	D-2
R548	B-3
R549	C-2
R550	D-2
R551	C-2
R552	C-2
R553	C-2
R554	B-3
R555	B-3
R556	C-2
R557	D-2
R559	E-5
R560	E-17
R561	E-2
R562	E-2
R563	B-15
R564	A-15
R565	A-7
R566	B-7
R567	A-8
R568	B-12
R569	E-18
R570	E-18
R571	E-18
R572	E-18
R573	E-18
R574	E-18
R575	E-18
R576	E-18
R577	E-18
R578	C-9
R579	C-9
R580	A-15
R581	A-15
R584	B-6
R585	E-2
R586	E-2
R587	B-7
RV501	E-1
S501	E-21
S502	D-20
S503	E-19
S504	D-20
S505	B-1
S506	C-20
S507	E-20
S508	B-1
S509	B-20
S510	B-20
S511	C-1
S512	A-20
S513	A-19
SW501	B-13

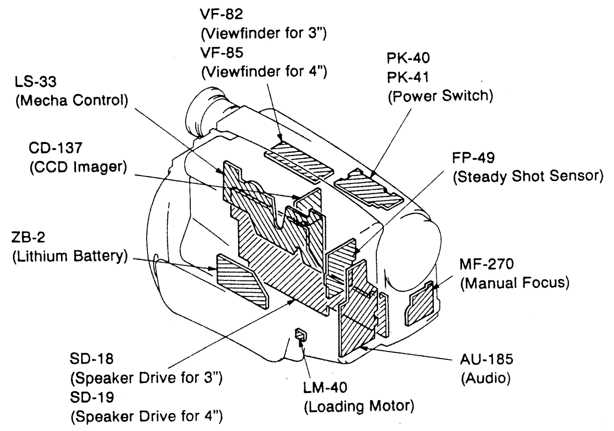

VF-82
(Viewfinder for 3")
VF-85
(Viewfinder for 4")
LS-33
(Mecha Control)
PK-40
PK-41
(Power Switch)
CD-137
(CCD Imager)
FP-49
(Steady Shot Sensor)
ZB-2
(Lithium Battery)
MF-270
(Manual Focus)
SD-18
(Speaker Drive for 3")
SD-19
(Speaker Drive for 4")
LM-40
(Loading Motor)
AU-185
(Audio)

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor


C
Q
B E
3 2 1
Q
4 5 6

SD-19 BOARD

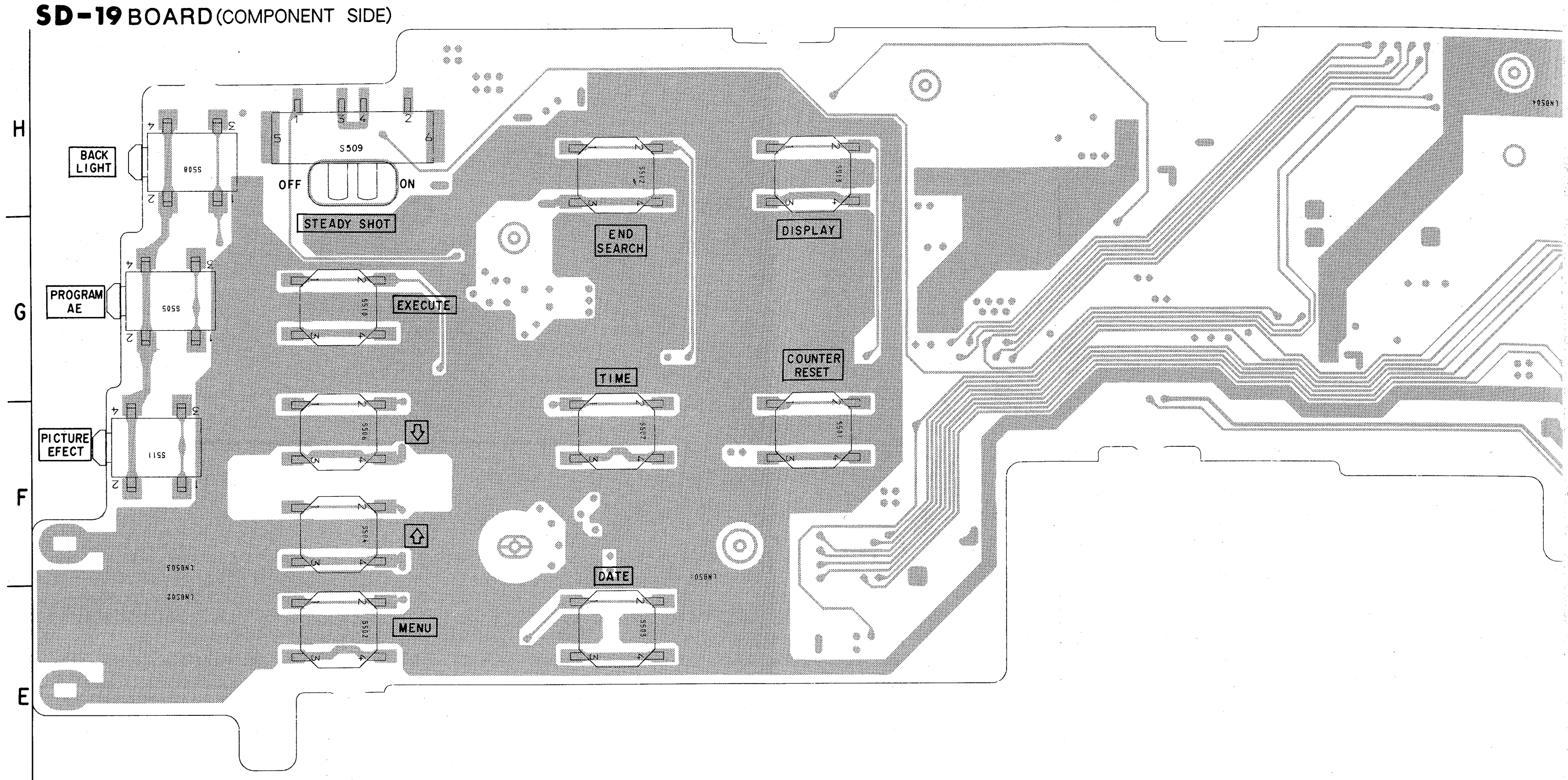
C501	B-4
C503	B-7
C504	B-6
C505	B-4
C506	A-4
C507	A-7
C508	B-5
C509	B-6
C511	A-7
C512	A-7
C513	B-8
C514	B-9
C515	A-7
C516	C-10
C517	B-9
C518	B-8
C519	B-8
C521	A-7
C523	B-6
C525	B-5
C526	B-4
C527	A-4
CN501	B-7
CN502	B-9
CN503	C-6
CN504	D-5
CN505	D-3
CN506	C-8
CN507	A-6
CN508	B-11
CN509	A-3
CN510	F-11
CN511	A-9
D501	A-6
D503	A-5
D506	B-6
D507	B-7
IC501	B-7
IC502	A-4
L501	B-3
L502	B-8
L503	B-8
L504	B-8
L505	B-8
L506	B-8
L507	B-8
L508	B-8
L509	B-8
PS501	B-2
Q501	A-7
Q503	B-5
Q504	A-6
Q505	A-4
Q506	A-5
Q507	B-6
Q508	B-6
Q509	A-6
Q510	B-9
Q511	A-6
Q512	A-6
Q513	B-8
Q515	A-8
Q516	B-8
Q517	B-7
Q518	B-7
Q519	B-8
Q520	B-7
Q521	B-7
R503	A-7
R505	B-5
R506	A-4
R507	B-5
R508	B-5
R510	B-7
R512	A-5
R513	B-6
R514	A-5
R515	A-6
R516	A-5
R519	B-6
R520	A-6
R521	B-5
R522	A-4
R523	C-2
R526	C-2
R527	A-4
R529	B-5
R530	B-5
R531	B-4
R532	B-6
R533	A-6
R534	B-6
R535	C-10
R536	B-8
R537	B-8
R538	A-8
R539	B-8
R540	B-4
R541	B-8
R542	B-8
R543	B-8
R544	B-5
R545	C-3
R546	C-3
R547	C-3
R548	B-2
R549	B-4
R550	B-4
R551	B-3
R552	B-1
R553	B-4
R554	B-3
R555	B-4
R556	B-1
R557	C-3
R558	A-1
R559	B-6
R560	C-5
R564	B-4
R565	A-6
R566	A-6
R567	B-6
R568	B-9
R569	C-4
R570	C-4
R571	C-4
R572	C-4
R573	C-4
R574	C-4
R575	C-4
R576	C-4
R577	C-4
R578	C-11
R579	C-11
R580	A-4
R581	A-4
R585	D-2
R586	C-2
R587	B-7
RV501	D-1
S501	F-5
S502	E-2
S503	E-4
S504	F-2
S505	G-1
S506	F-2
S507	F-4
S508	H-1
S509	H-2
S510	G-2
S511	F-1
S512	H-4
S513	H-5
SW501	F-10


VF-82
(Viewfinder for 3”)
VF-85
(Viewfinder for 4”)
PK-40
PK-41
(Power Switch)
LS-33
(Mecha Control)
CD-137
(CCD Imager)
FP-49
(Steady Shot Sensor)
ZB-2
(Lithium Battery)
MF-270
(Manual Focus)
SD-18
(Speaker Drive for 3”)
SD-19
(Speaker Drive for 4”)
LM-40
(Loading Motor)
AU-185
(Audio)

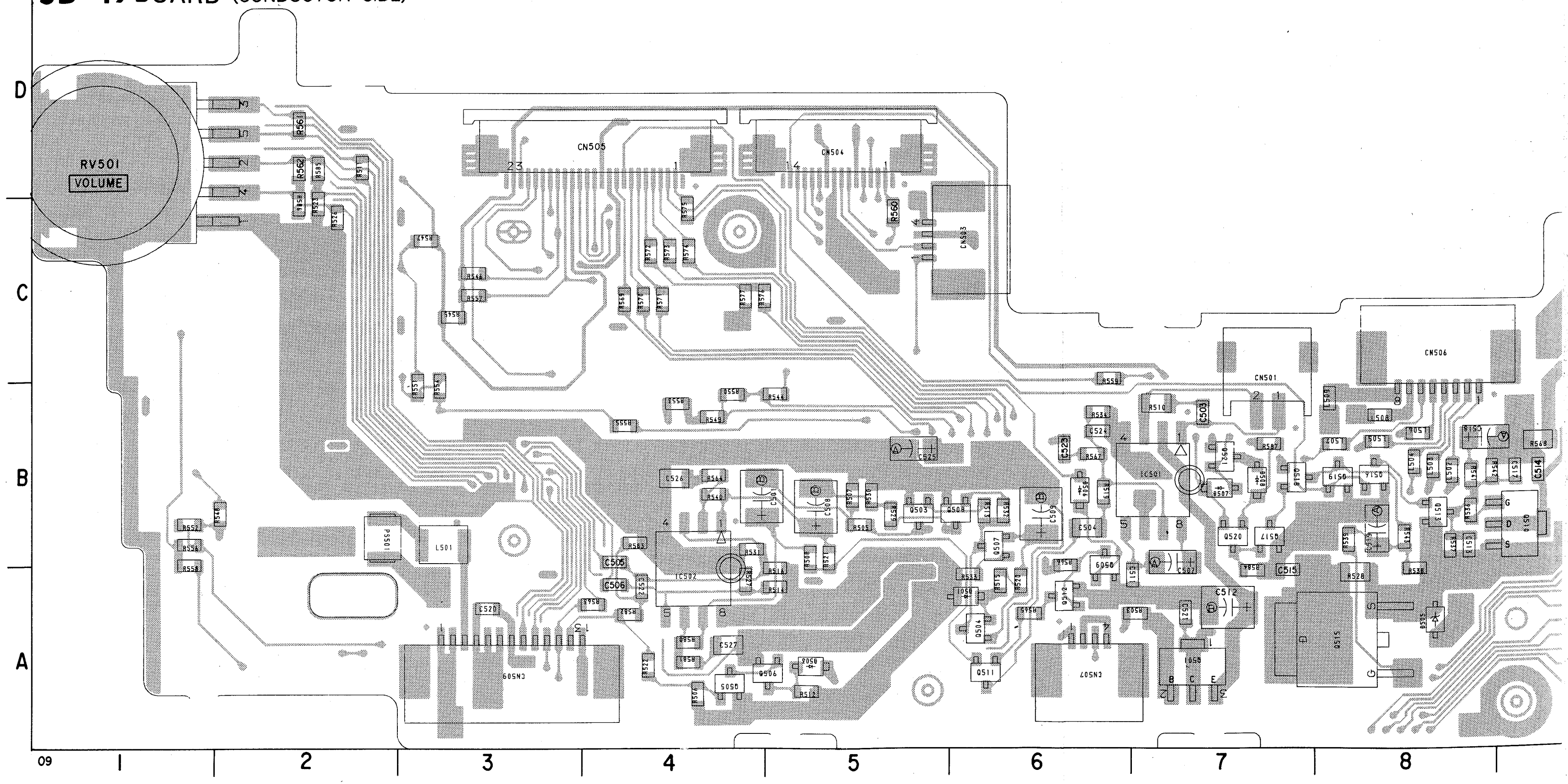
SD-19 (SPEAKER DRIVE for 4”) PRINTED WIRING BOARD

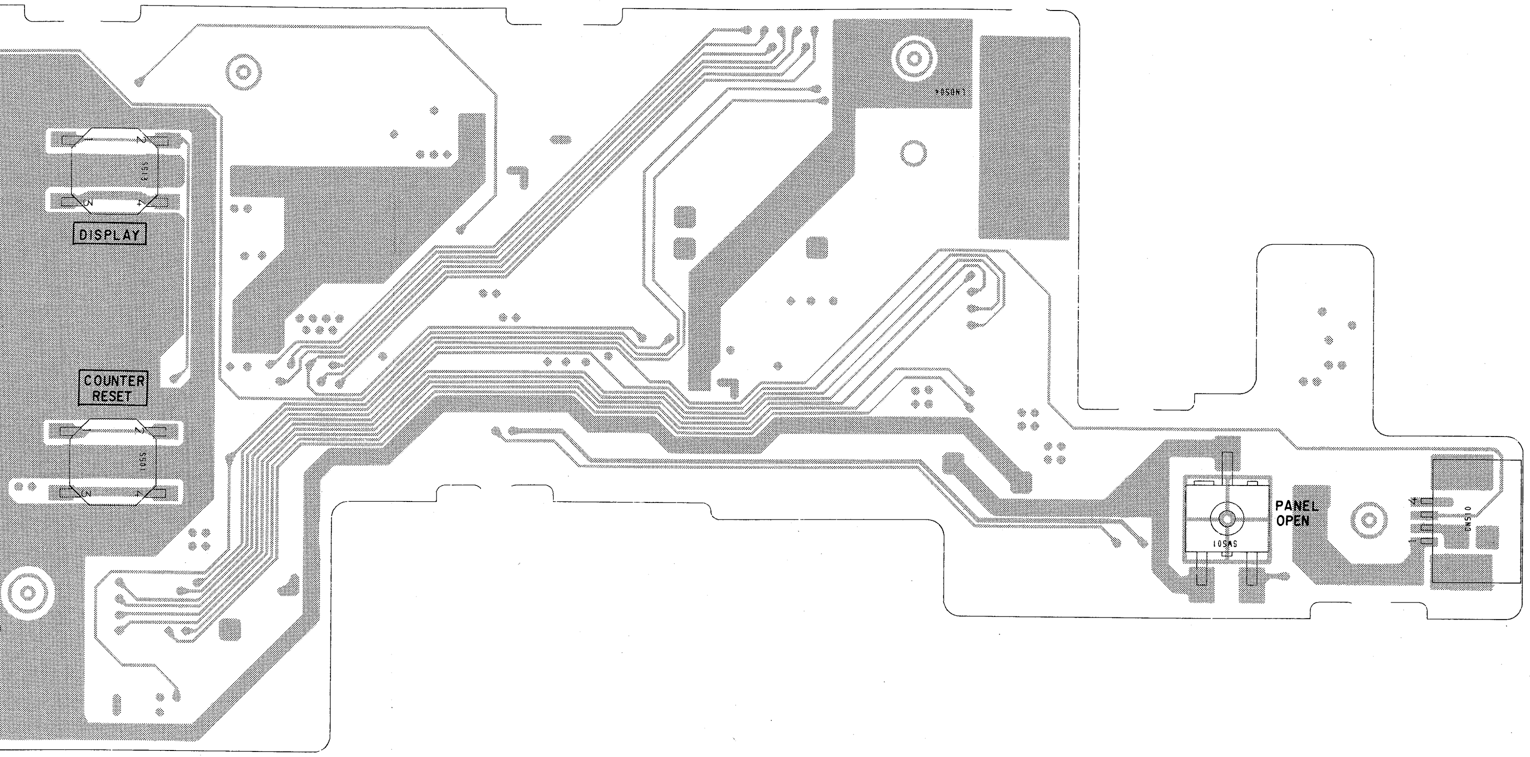
— Ref. No. SD-19 BOARD: 6000 series —

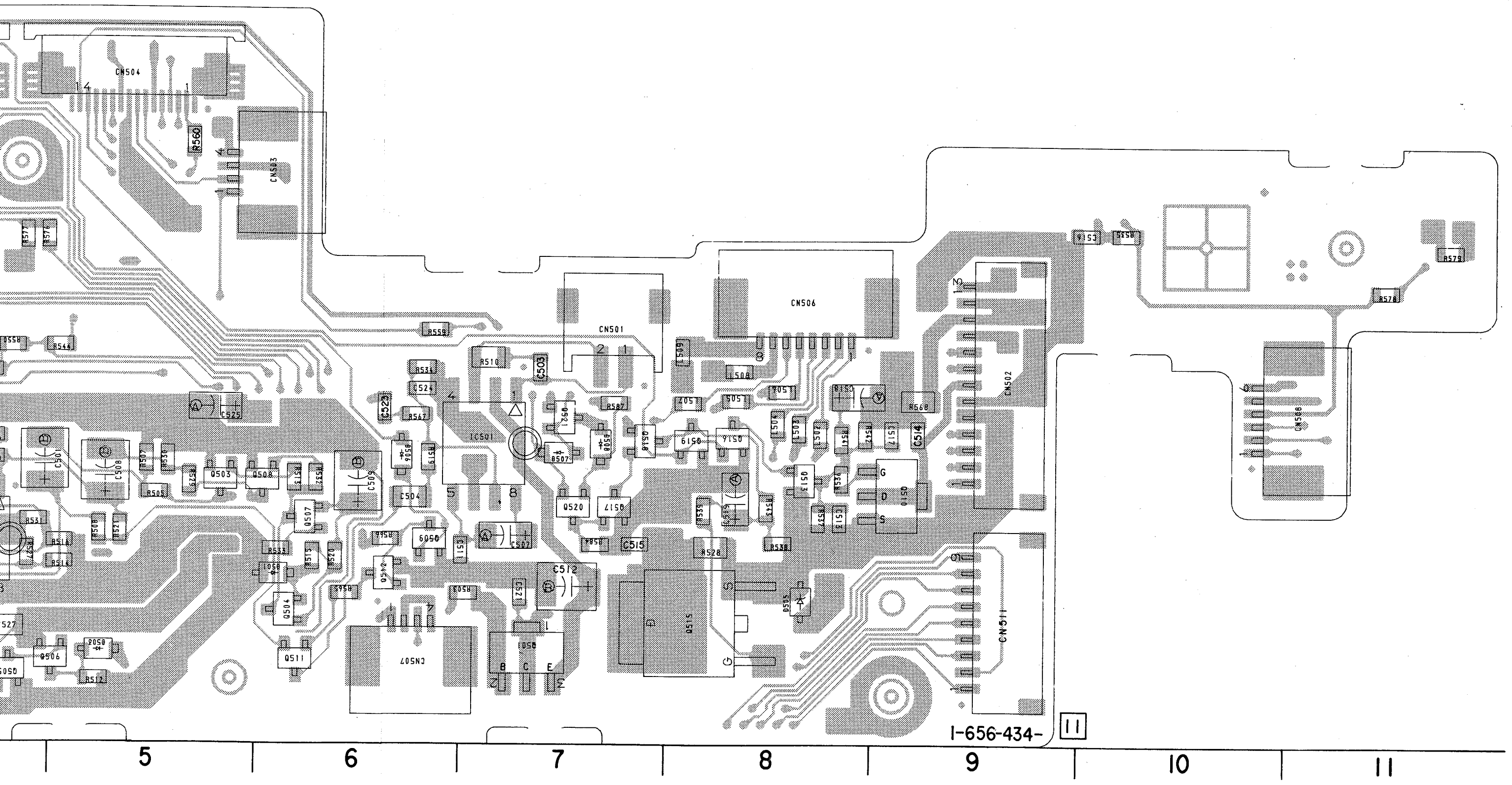
SD-19 BOARD (COMPONENT SIDE)


H
G
F
E
BACK LIGHT
S508
S509
OFF
ON
STEADY SHOT
PROGRAM AE
S505
EXECUTE
END SEARCH
DISPLAY
TIME
COUNTER RESET
PICTURE EFECT
S511
DATE
MENU

SD-19 BOARD (CONDUCTOR SIDE)

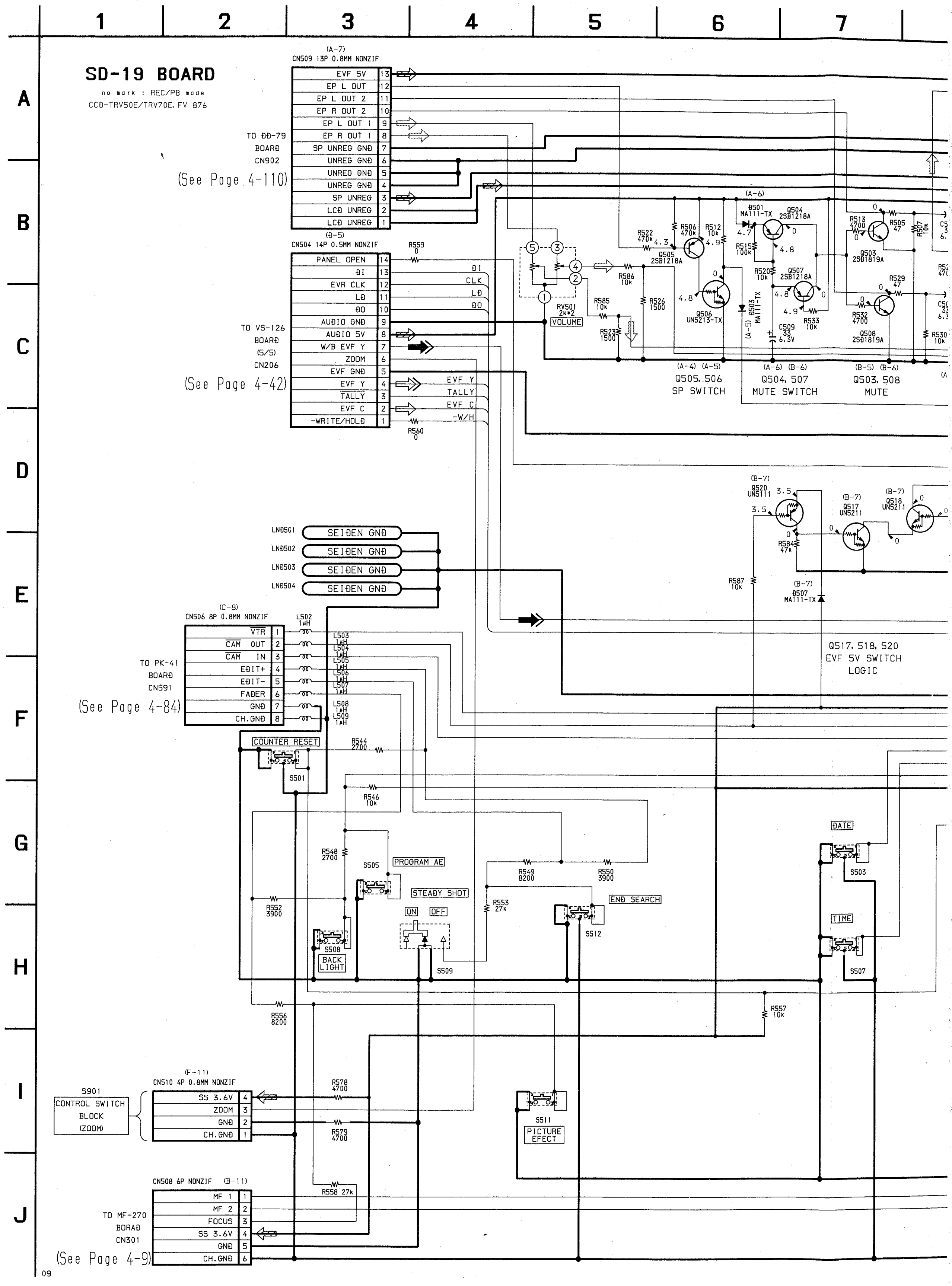

D
C
B
A
RV501
VOLUME
CN505
CN504
CN506
CN501
09
1
2
3
4
5
6
7
8


DISPLAY
COUNTER RESET
PANEL OPEN


CN504
CN506
CN501
IC501
1-656-434- 11
5
6
7
8
9
10
11

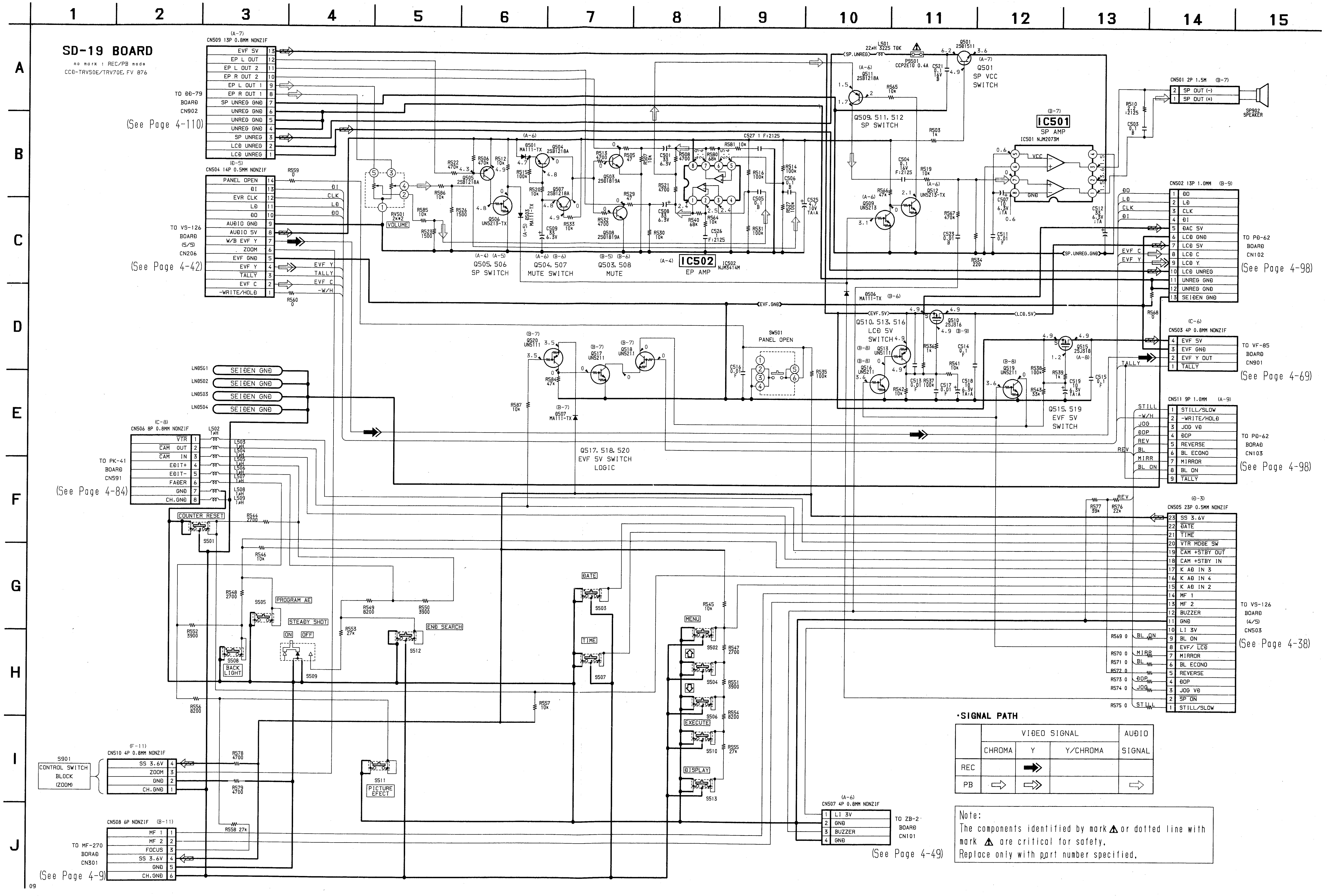
SD-19 (SPEAKER DRIVE for 4") SCHEMATIC DIAGRAM

— Ref. No. SD-19 BOARD: 6000 series —


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
SD-19 BOARD
no mark : REC/PB mode
CCD-TRV50E/TRV70E, FV 876
CN509 13P 0.8MM NONZIF
EVF 5V
EP L OUT
EP L OUT 2
EP R OUT 2
EP L OUT 1
EP R OUT 1
SP UNREG GND
UNREG GND
SP UNREG
LCD UNREG
TO DD-79 BOARD CN902
(See Page 4-110)
CN504 14P 0.5MM NONZIF
PANEL OPEN
DI
EVR CLK
LD
DO
AUDIO GND
AUDIO 5V
W/B EVF Y
ZOOM
EVF GND
EVF Y
TALLY
EVF C
-WRITE/HOLD
TO VS-126 BOARD (S/S) CN206
(See Page 4-42)
RV501 VOLUME
Q505, 506 SP SWITCH
Q504, 507 MUTE SWITCH
Q503, 508 MUTE
LN0501 SEIDEN GND
LN0502 SEIDEN GND
LN0503 SEIDEN GND
LN0504 SEIDEN GND
Q517, 518, 520 EVF 5V SWITCH LOGIC
CN506 8P 0.8MM NONZIF
VTR
CAM OUT
CAM IN
EDIT+
EDIT-
FADER
GND
CH.GND
TO PK-41 BOARD CN591
(See Page 4-84)
COUNTER RESET
S501
PROGRAM AE
S505
STEADY SHOT
ON
OFF
S509
BACK LIGHT
S508
END SEARCH
S512
DATE
S503
TIME
S507
S901 CONTROL SWITCH BLOCK (ZOOM)
CN510 4P 0.8MM NONZIF
SS 3.6V
ZOOM
GND
CH.GND
PICTURE EFECT
S511
CN508 6P NONZIF
MF 1
MF 2
FOCUS
SS 3.6V
GND
CH.GND
TO MF-270 BORAD CN301
(See Page 4-9)

SD-19 (SPEAKER DRIVE for 4") SCHEMATIC DIAGRAM

— Ref. No. SD-19 BOARD: 6000 series —


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
SD-19 BOARD
no mark : REC/PB mode
CCD-TRV50E/TRV70E, FV 876
CN509 13P 0.8MM NONZIF
TO 06-79 BOARD CN902
(See Page 4-110)
CN504 14P 0.5MM NONZIF
TO VS-126 BOARD (5/5) CN206
(See Page 4-42)
Q505, 506 SP SWITCH
Q504, 507 MUTE SWITCH
Q503, 508 MUTE
IC502 EP AMP
Q501 SP VCC SWITCH
Q509, 511, 512 SP SWITCH
IC501 SP AMP
CN501 2P 1.5M
SP902 SPEAKER
CN502 13P 1.0MM
TO PD-62 BOARD CN102
(See Page 4-98)
Q510, 513, 516 LCD 5V SWITCH
SW501 PANEL OPEN
Q517, 518, 520 EVF 5V SWITCH LOGIC
Q515, 519 EVF 5V SWITCH
CN503 4P 0.8MM NONZIF
TO VF-85 BOARD CN901
(See Page 4-69)
CN511 9P 1.0MM
TO PD-62 BOARD CN103
(See Page 4-98)
CN505 23P 0.5MM NONZIF
TO VS-126 BOARD (4/5) CN503
(See Page 4-38)
CN506 8P 0.8MM NONZIF
TO PK-41 BOARD CN591
(See Page 4-84)
COUNTER RESET
PROGRAM AE
STEADY SHOT
END SEARCH
BACK LIGHT
DATE
TIME
MENU
EXECUTE
DISPLAY
PICTURE EFFECT
S901 CONTROL SWITCH BLOCK (ZOOM)
CN510 4P 0.8MM NONZIF
CN508 6P NONZIF
TO MF-270 BORAD CN301
(See Page 4-9)
CN507 4P 0.8MM NONZIF
TO ZB-2 BOARD CN101
(See Page 4-49)

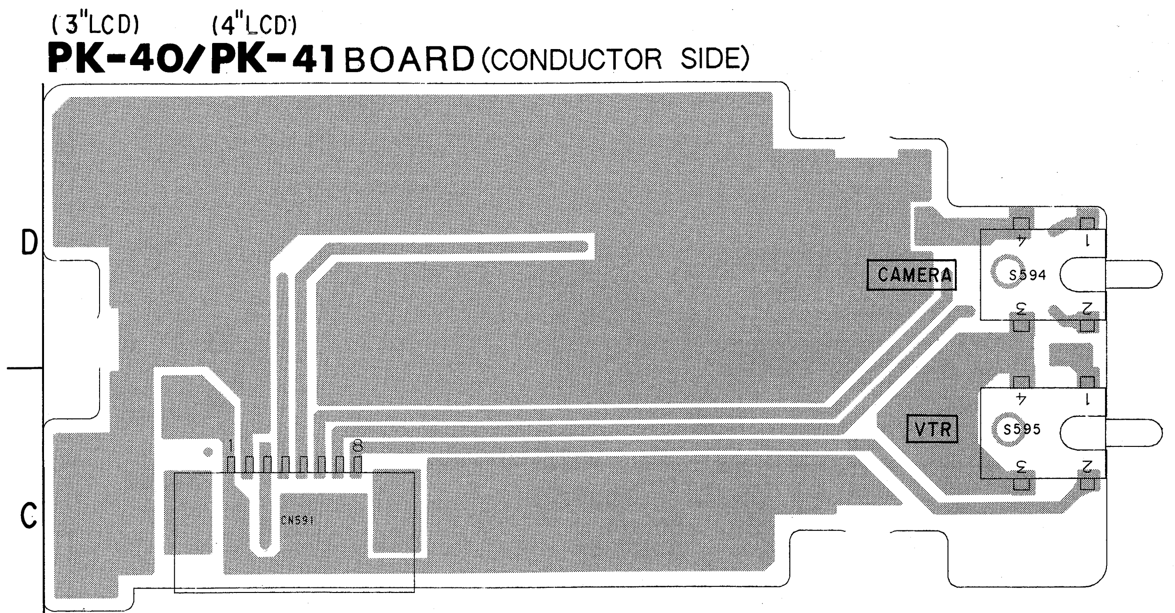
·SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC		➡		
PB	⇨	⇨		⇨

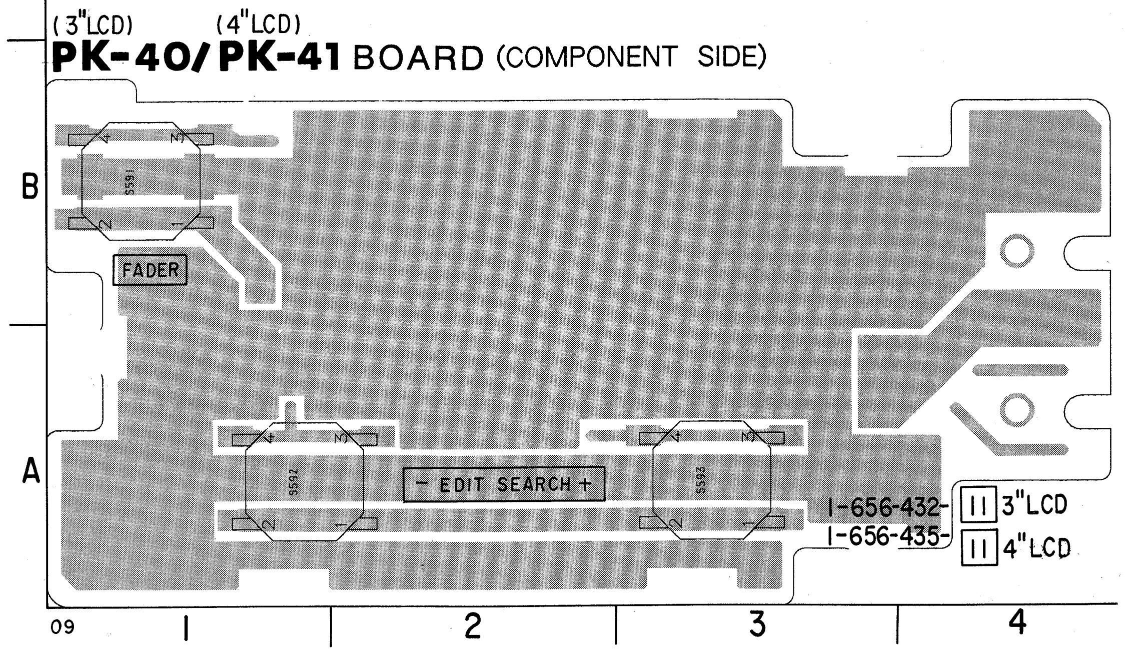
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

PK-40, 41 (POWER SWITCH) PRINTED WIRING BOARDS

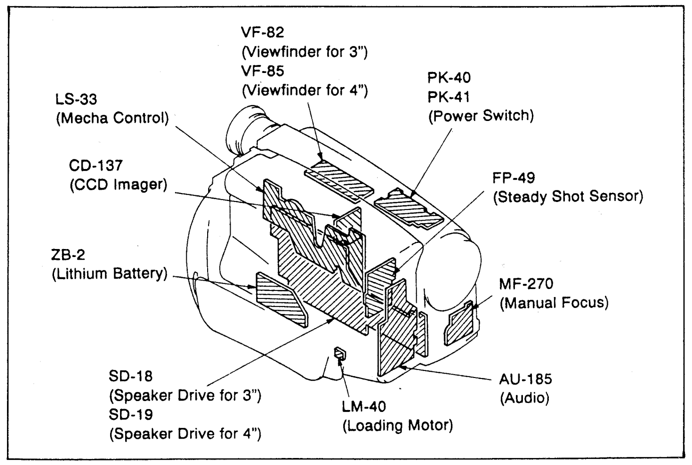
— Ref. No. PK-40 BOARD: 5000 series, PK-41 BOARD: 6000 series —



(3"LCD) (4"LCD)
PK-40/PK-41 BOARD (CONDUCTOR SIDE)
D
C
CAMERA
S594
VTR
S595
CN591



(3"LCD) (4"LCD)
PK-40/PK-41 BOARD (COMPONENT SIDE)
B
A
S591
FADER
S592
− EDIT SEARCH +
S593
1-656-432- 11 3"LCD
1-656-435- 11 4"LCD
09
1
2
3
4

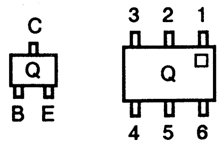


VF-82
(Viewfinder for 3")
VF-85
(Viewfinder for 4")
LS-33
(Mecha Control)
PK-40
PK-41
(Power Switch)
CD-137
(CCD Imager)
FP-49
(Steady Shot Sensor)
ZB-2
(Lithium Battery)
MF-270
(Manual Focus)
SD-18
(Speaker Drive for 3")
SD-19
(Speaker Drive for 4")
LM-40
(Loading Motor)
AU-185
(Audio)

PK-40/41 BOARD

CN591	C-1
S591	B-1
S592	A-1
S593	A-3
S594	D-4
S595	C-4

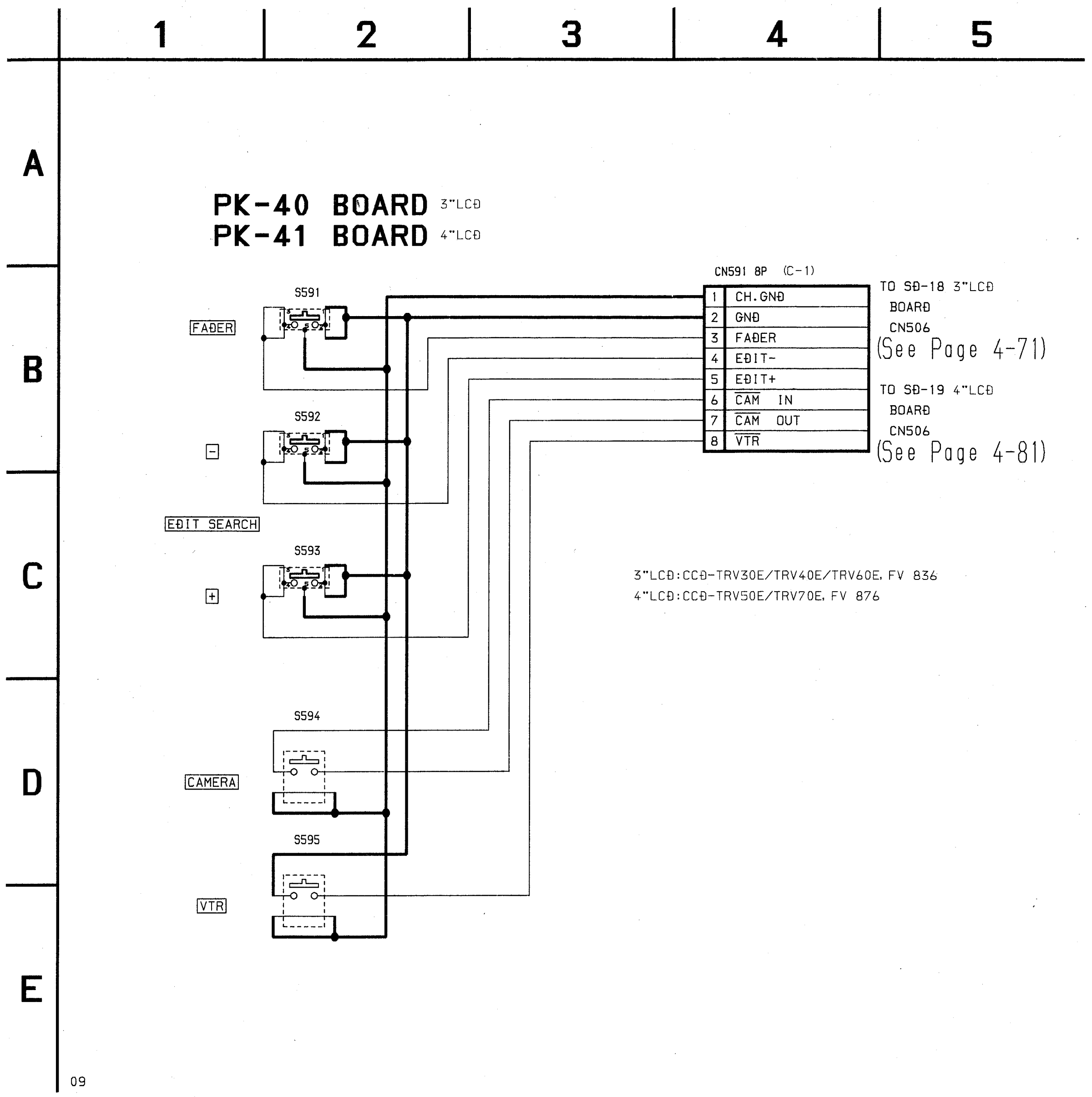
- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor



C
Q
B E
3 2 1
Q
4 5 6

PK-40, 41 (POWER SWITCH) SCHEMATIC DIAGRAMS

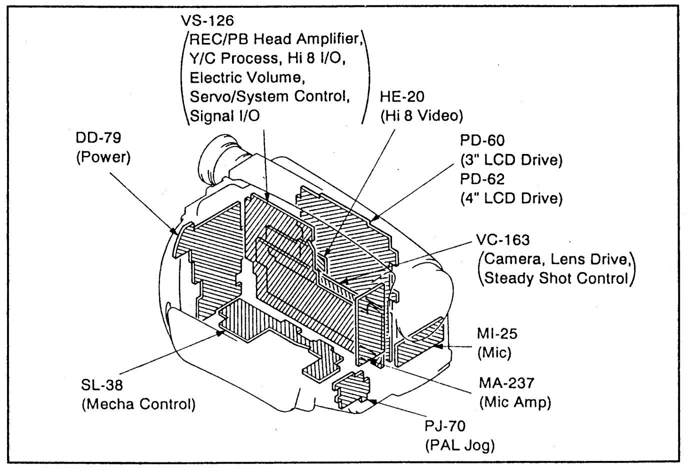
— Ref. No. PK-40 BOARD: 5000 series, PK-41 BOARD: 6000 series —



1
2
3
4
5
A
B
C
D
E
PK-40 BOARD 3"LCD
PK-41 BOARD 4"LCD
CN591 8P (C-1)
1 CH.GND
2 GND
3 FADER
4 EDIT-
5 EDIT+
6 CAM IN
7 CAM OUT
8 VTR
TO SD-18 3"LCD BOARD CN506
(See Page 4-71)
TO SD-19 4"LCD BOARD CN506
(See Page 4-81)
S591
FADER
S592
−
EDIT SEARCH
S593
+
S594
CAMERA
S595
VTR
3"LCD:CCD-TRV30E/TRV40E/TRV60E, FV 836
4"LCD:CCD-TRV50E/TRV70E, FV 876
09

PD-60 BOARD

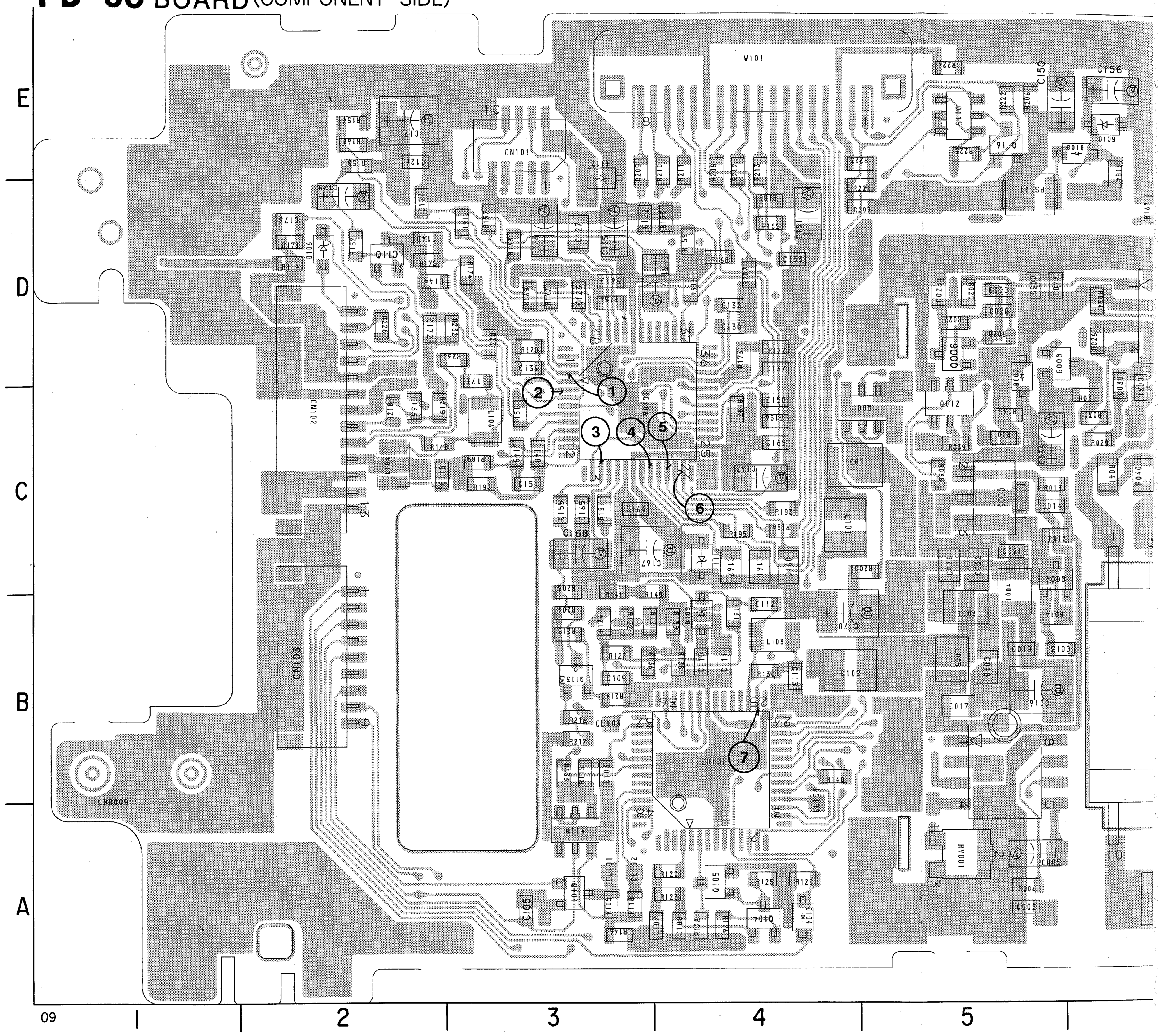
C002	A-5
C003	A-11
C004	A-10
C005	A-5
C006	A-11
C007	B-11
C008	B-11
C010	D-11
C011	C-11
C012	C-11
C013	B-5
C014	C-5
C015	C-11
C016	B-5
C017	B-5
C018	B-5
C019	B-5
C020	C-5
C021	C-5
C022	C-5
C023	D-5
C024	D-11
C025	D-5
C026	D-6
C027	D-7
C028	D-5
C029	D-5
C030	C-6
C031	C-6
C033	C-10
C034	C-10
C036	C-5
C037	C-7
C038	A-6
C101	A-12
C102	B-13
C103	B-3
C104	A-12
C105	A-3
C106	A-12
C107	A-4
C108	A-4
C109	B-3
C110	B-4
C111	B-4
C112	B-4
C113	B-4
C114	B-13
C115	B-13
C118	C-2
C120	E-2
C121	E-2
C122	D-3
C125	D-3
C126	D-3
C127	D-3
C128	D-3
C129	D-2
C130	D-4
C131	D-4
C132	D-4
C133	C-2
C134	D-3
C135	D-12
C137	D-4
C138	C-13
C139	C-13
C140	D-2
C141	C-13
C142	C-13
C143	D-12
C144	D-2
C145	D-12
C146	C-13
C148	C-3
C149	C-3
C150	E-5
C151	D-4
C152	C-12
C153	D-4
C154	C-3
C155	C-3
C156	E-6
C157	D-12
C158	C-4
C159	D-12
C160	C-4
C161	C-4
C162	C-4
C163	C-4
C164	C-3
C165	C-3
C167	C-3
C168	C-3
C170	B-4
CN101	E-3
CN102	C-2
CN103	B-2
D002	B-11
D003	B-11
D004	B-11
D005	C-11
D006	C-10
D007	D-5
D008	A-10
D101	E-8
D103	B-4
D104	A-4
D105	D-7
D106	D-2
D107	C-13
D108	E-6
D109	E-6
D110	D-12
D111	C-4
IC001	B-5
IC002	D-6
IC101	A-12
IC102	B-12
IC103	B-4
IC104	B-12
IC105	D-13
IC106	C-3
L001	C-4
L002	C-11
L003	B-5
L004	B-5
L005	B-5
L006	D-11
L007	D-10
L008	C-10
L101	C-4
L102	B-4
L103	B-4
L104	C-2
L105	C-12
L107	C-13
PS101	D-5
Q001	C-5
Q003	A-11
Q004	C-5
Q005	C-5
Q006	D-5
Q007	D-6
Q008	D-10
Q010	C-6
Q012	C-5
Q101	A-3
Q102	B-12
Q103	A-12
Q104	A-4
Q105	A-4
Q106	A-13
Q109	D-12
Q110	D-2
Q111	C-12
Q112	C-13
Q113	B-3
Q114	A-3
R001	C-5
R002	A-10
R003	B-11
R004	B-11
R005	A-11
R006	A-5
R007	A-11
R008	A-11
R009	B-11
R010	A-11
R011	B-11
R012	C-5
R013	B-11
R014	B-5
R015	C-5
R016	C-11
R020	C-11
R021	C-11
R022	C-10
R023	D-6
R024	D-7
R025	D-5
R026	D-6
R027	D-5
R028	D-5
R029	C-6
R030	C-6
R031	C-6
R032	D-10
R034	D-6
R035	C-5
R036	C-10
R037	C-10
R038	C-5
R039	C-5
R101	D-6
R103	A-12
R104	A-12
R105	A-3
R107	B-12
R108	A-12
R110	A-12
R113	A-12
R114	D-2
R115	B-3
R116	A-12
R118	A-3
R119	A-12
R120	A-4
R121	B-3
R122	B-3
R123	A-4
R124	B-3
R125	A-4
R126	A-4
R127	B-3
R128	A-4
R129	A-4
R130	B-4
R131	B-4
R132	B-13
R133	B-3
R134	B-13
R135	B-12
R136	B-3
R137	B-12
R138	B-4
R139	B-4
R140	B-4
R141	C-3
R143	B-12
R144	B-12
R145	B-12
R146	A-3
R147	D-12
R148	C-2
R149	C-3
R151	C-3
R152	D-2
R153	D-4
R155	D-12
R156	D-3
R157	D-3
R158	E-2
R159	D-4
R160	E-2
R161	D-3
R163	D-3
R164	D-4
R165	D-13
R166	D-12
R167	D-6
R168	D-4
R169	D-3
R170	D-3
R171	D-2
R172	D-4
R173	D-4
R174	D-3
R175	D-2
R176	D-12
R177	D-3
R178	D-12
R179	C-13
R180	C-13
R181	D-13
R182	C-13
R183	C-13
R184	E-6
R185	D-4
R186	D-4
R187	C-12
R188	C-12
R189	C-3
R190	D-12
R191	C-3
R192	C-3
R193	C-4
R194	C-4
R195	C-4
R201	C-12
R202	D-4
R203	C-3
R204	B-3
R205	C-5
R208	E-4
R209	E-3
R210	E-4
R211	E-4
R212	E-4
R213	E-4
R214	B-3
R215	B-3
R216	B-3
R217	B-3
R218	C-2
R219	C-2
R221	D-5
R222	E-5
R224	E-5
R228	D-2
RV101	D-7
S101	D-15
T001	C-11
T002	B-6
W101	E-4
X101	C-12


VS-126
(REC/PB Head Amplifier, Y/C Process, Hi 8 I/O, Electric Volume, Servo/System Control, Signal I/O)
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive, Steady Shot Control)
MI-25
(Mic)
MA-237
(Mic Amp)
SL-38
(Mecha Control)
PJ-70
(PAL Jog)

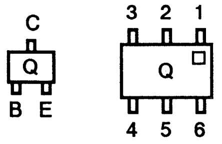
PD-60 (3" LCD DRIVE) PRINTED WIRING BOARD

— Ref. No. PD-60 BOARD: 5000 series —

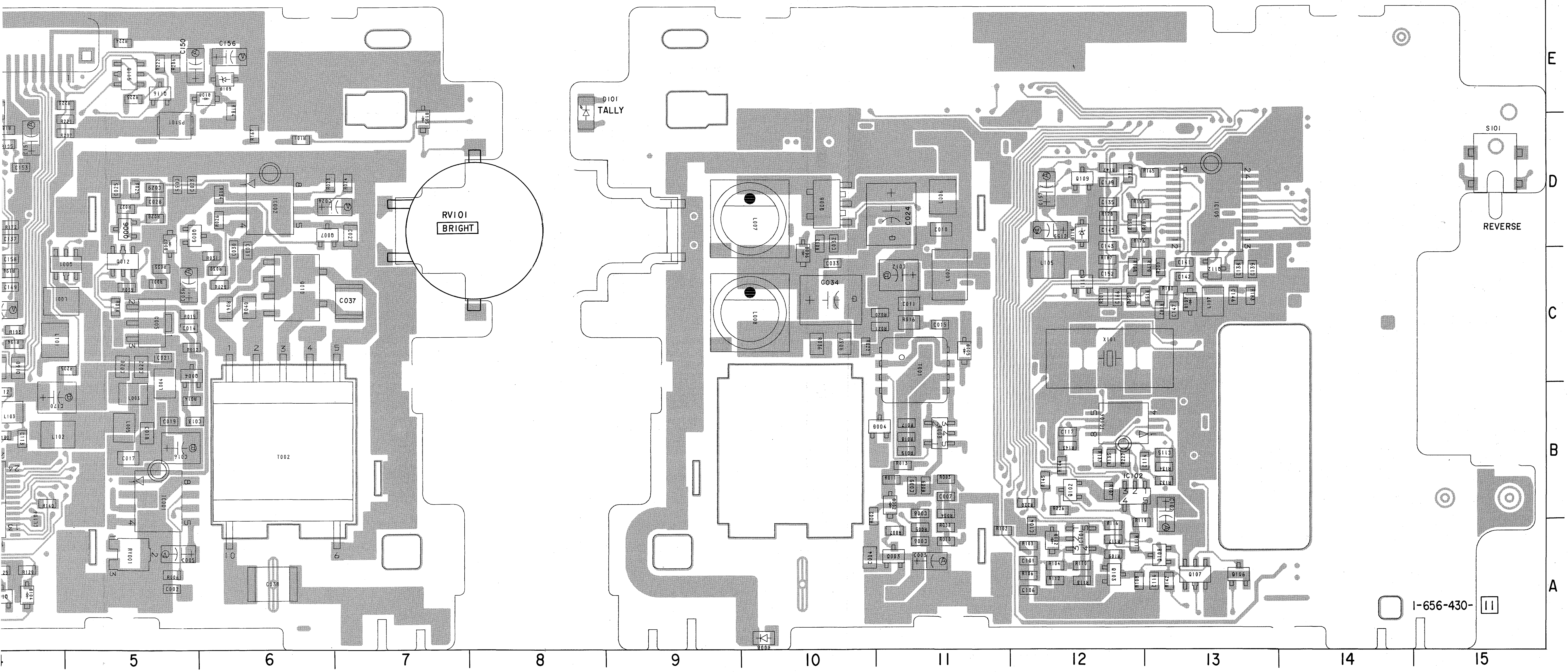
PD-60 BOARD (COMPONENT SIDE)


E
D
C
B
A
09
1
2
3
4
5
W101
CN101
CN102
CN103
IC103
LN0009
①
②
③
④
⑤
⑥
⑦

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor


C
Q
B E
3 2 1
Q
4 5 6

PD-60 BOARD (CONDUCTOR SIDE)


RV101
BRIGHT
D101
TALLY
S101
REVERSE
IC102
X101
T002
C034
C037
C038
C024
L007
L008
1-656-430-11
E
D
C
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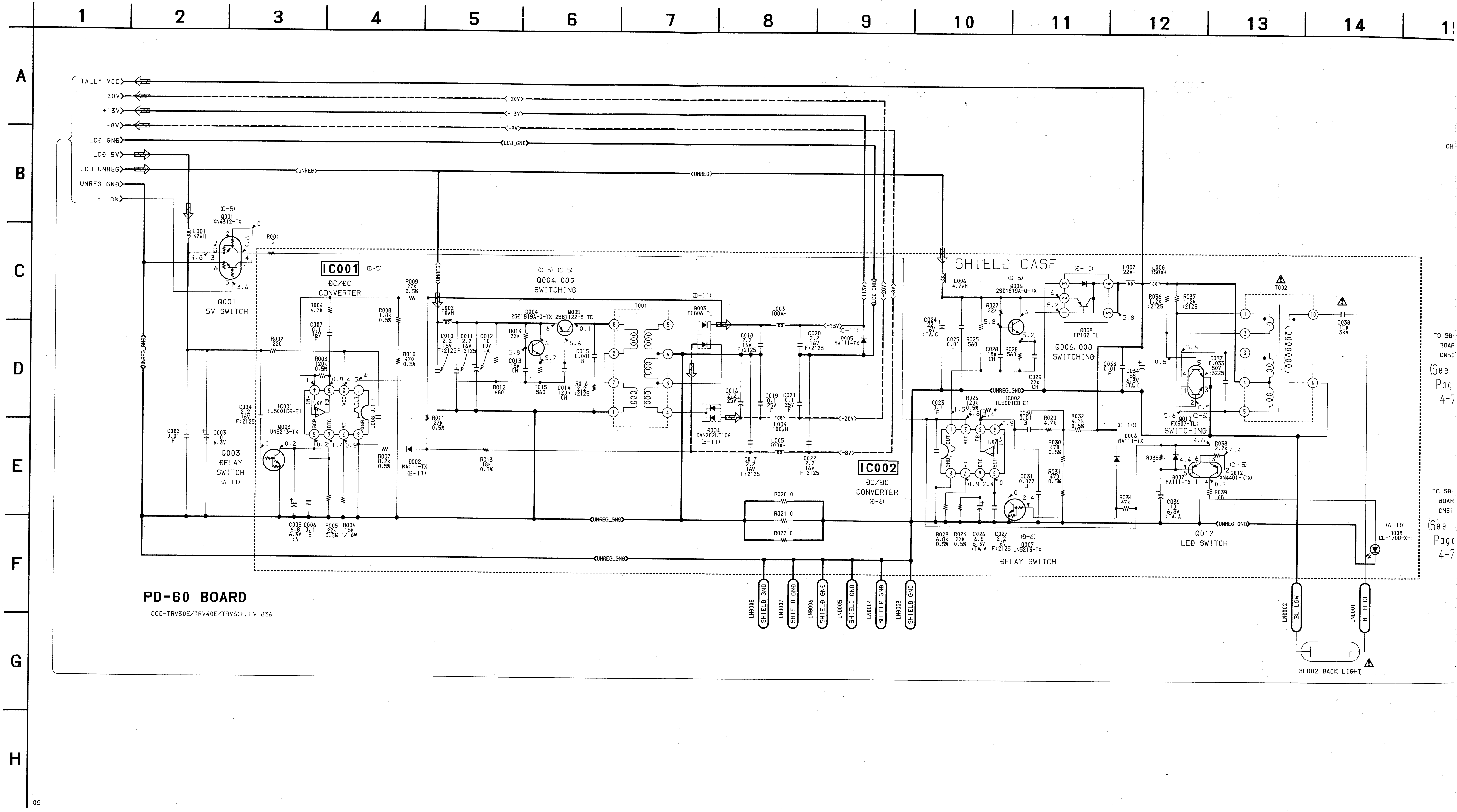
15

PD-60 (3" LCD DRIVE) SCHEMATIC DIAGRAM

— Ref. No. PD-60 BOARD: 5000 series —


1
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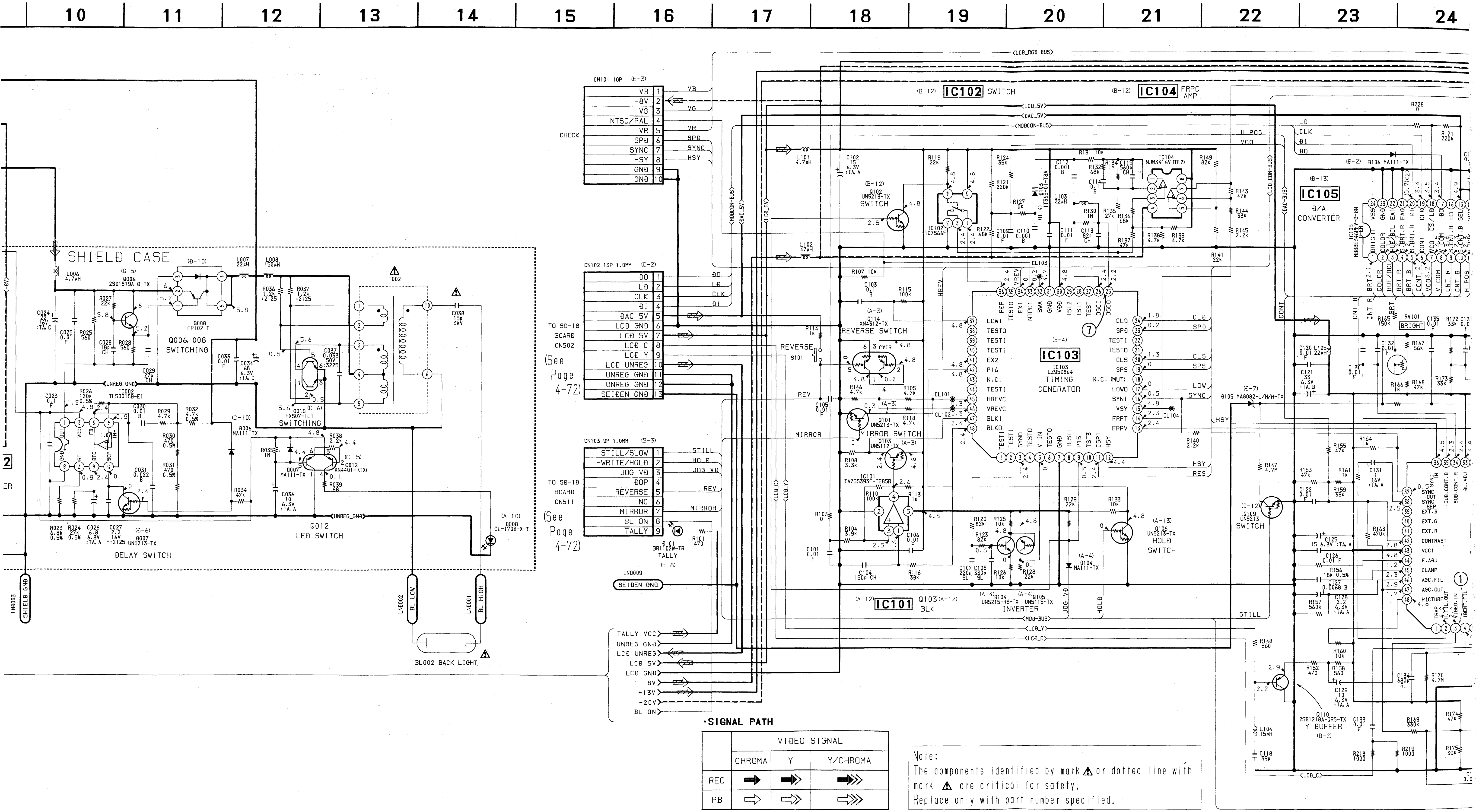
A
B
C
D
E
F
G
H
TALLY VCC
-20V
+13V
-8V
LCD GND
LCD 5V
LCD UNREG
UNREG GND
BL ON
Q001 XN4312-TX
Q001 5V SWITCH
L001 47μH
R001 0
IC001 DC/DC CONVERTER
IC001 TL5001CD-E1
Q003 UN5213-TX
Q003 DELAY SWITCH
Q004, 005 SWITCHING
Q004 2SD1819A-Q-TX
Q005 2SB1122-S-TC
T001
D003 FC806-TL
D004 DAN202UT106
D005 MA111-TX
D002 MA111-TX
L002 10μH
L003 100μH
L004 100μH
L005 100μH
R020 0
R021 0
R022 0
UNREG_GND
IC002 DC/DC CONVERTER
IC002 TL5001CD-E1
SHIELD CASE
Q006 2SD1819A-Q-TX
Q008 FP102-TL
Q006, 008 SWITCHING
L006 4.7μH
L007 22μH
L008 150μH
T002
Q010 FX507-TL1
Q010 SWITCHING
Q012 XN4401-(TX)
Q012 LED SWITCH
Q007 UN5213-TX
DELAY SWITCH
D006 MA111-TX
D007 MA111-TX
D008 CL-170B-X-T
SHIELD GND
LND008
LND007
LND006
LND005
LND004
LND003
LND002 BL LOW
LND001 BL HIGH
BL002 BACK LIGHT
PD-60 BOARD
CCD-TRV30E/TRV40E/TRV60E, FV 836
TO SD- BOAR CN50 (See Pag 4-7
TO SD- BOAR CN51 (See Page 4-7
09


10
11
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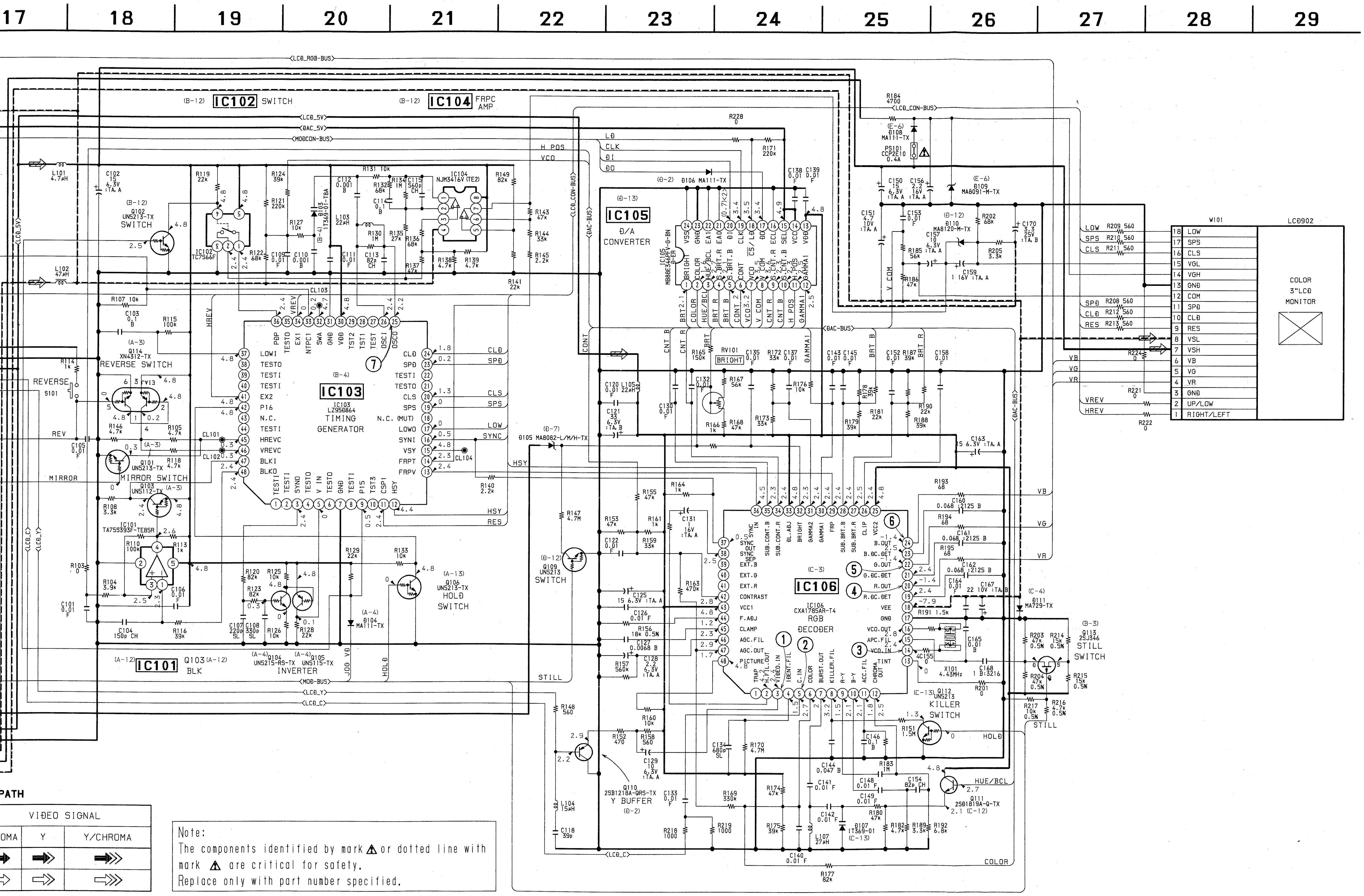
24
SHIELD CASE
Q006, 008 SWITCHING
Q010 FX507-TL1 SWITCHING
DELAY SWITCH
Q012 LED SWITCH
IC002 TL5001CD-E1
T002
BL002 BACK LIGHT
BL LOW
BL HIGH
SHIELD GND
CN101 10P
VB
-8V
VG
NTSC/PAL
VR
SPD
SYNC
HSY
GND
CHECK
CN102 13P 1.0MM
DO
LD
CLK
DI
DAC 5V
LCD GND
LCD 5V
LCD C
LCD Y
LCD UNREG
UNREG GND
SEIDEN GND
TO SD-18 BOARD CN502
(See Page 4-72)
CN103 9P 1.0MM
STILL/SLOW
-WRITE/HOLD
JOG VD
DOP
REVERSE
NC
MIRROR
BL ON
TALLY
TO SD-18 BOARD CN511
(See Page 4-72)
D101 BR1102W-TR TALLY
SEIDEN GND
TALLY VCC
UNREG GND
LCD UNREG
LCD 5V
LCD GND
-8V
+13V
-20V
BL ON
IC102 SWITCH
IC104 FRPC AMP
IC103 LZ95D864 TIMING GENERATOR
IC101 TA75S393F-TE85R
Q103 BLK
Q114 XN4312-TX REVERSE SWITCH
Q101 UN5213-TX MIRROR SWITCH
Q102 UN5213-TX SWITCH
Q104 UN5215-RS-TX, Q105 UN5115-TX INVERTER
Q106 UN5213-TX HOLD SWITCH
IC105 D/A CONVERTER
Q109 UN5213 SWITCH
Q110 2SB1218A-QRS-TX Y BUFFER
LCD-RGB-BUS
LCD_5V
DAC_5V
MODCON-BUS
MOD-BUS
LCD_Y
LCD_C

·SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡»	➡⋙
PB	⇨	⇨»	⇨⋙

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.


17
18
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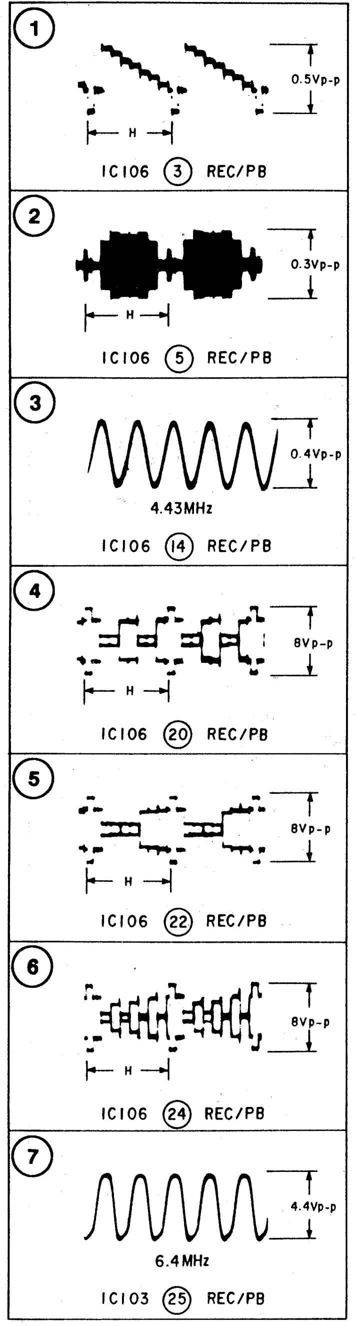
29
IC102 SWITCH
IC104 FRPC AMP
IC105 D/A CONVERTER
IC103 LZ95D864 TIMING GENERATOR
IC106 CXA1785AR-T4 RGB DECODER
IC101 TA75S393F-TE85R
Q103 BLK
Q102 UN5213-TX SWITCH
Q114 XN4312-TX REVERSE SWITCH
Q101 UN5213-TX MIRROR SWITCH
Q103 UN5112-TX
Q104 UN5215-RS-TX Q105 UN5115-TX INVERTER
Q106 UN5213-TX HOLD SWITCH
Q109 UN5213 SWITCH
Q110 2SB1218A-QRS-TX Y BUFFER
Q111 2SD1819A-Q-TX
Q112 UN5213 KILLER SWITCH
Q113 2SJ346 STILL SWITCH
D105 MA8082-L/M/H-TX
D106 MA111-TX
D108 MA111-TX
D109 MA8091-M-TX
D110 MA8120-M-TX
D111 MA729-TX
PS101 CCP2E10 0.4A
W101
LCD902
COLOR 3"LCD MONITOR
LOW
SPS
CLS
VGL
VGH
GND
COM
SPD
CLD
RES
VSL
VSH
VB
VG
VR
UP/LOW
RIGHT/LEFT
VREV
HREV
REVERSE S101
MIRROR
REV
STILL
HOLD
HUE/BCL
COLOR
CONT
BRIGHT
RV101
X101 4.43MHz
<LCD_RGB-BUS>
<LCD_5V>
<DAC_5V>
<MODCON-BUS>
<LCD_CON-BUS>
<DAC-BUS>
<MOD-BUS>
<LCD_Y>
<LCD_C>

PATH

	VIDEO SIGNAL	
OMA	Y	Y/CHROMA
➡	➡	➡
⇨	⇨	⇨

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

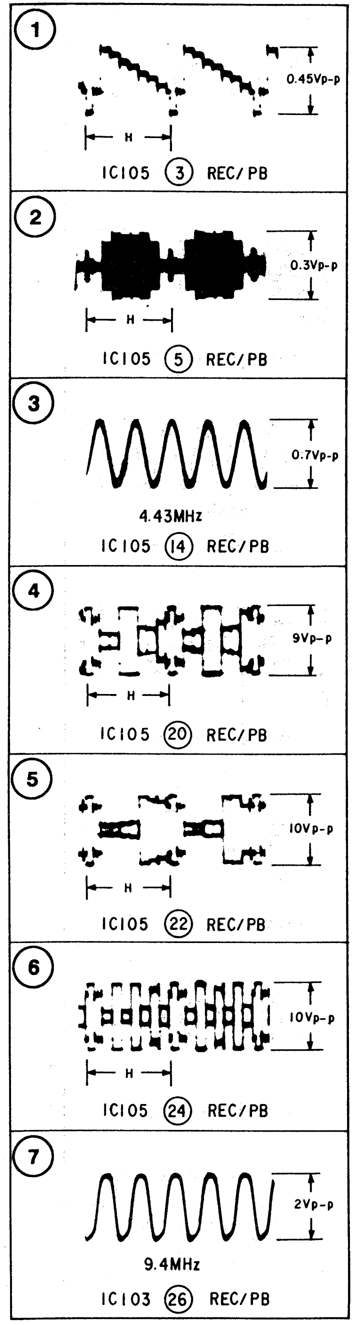
PD-60 BOARD

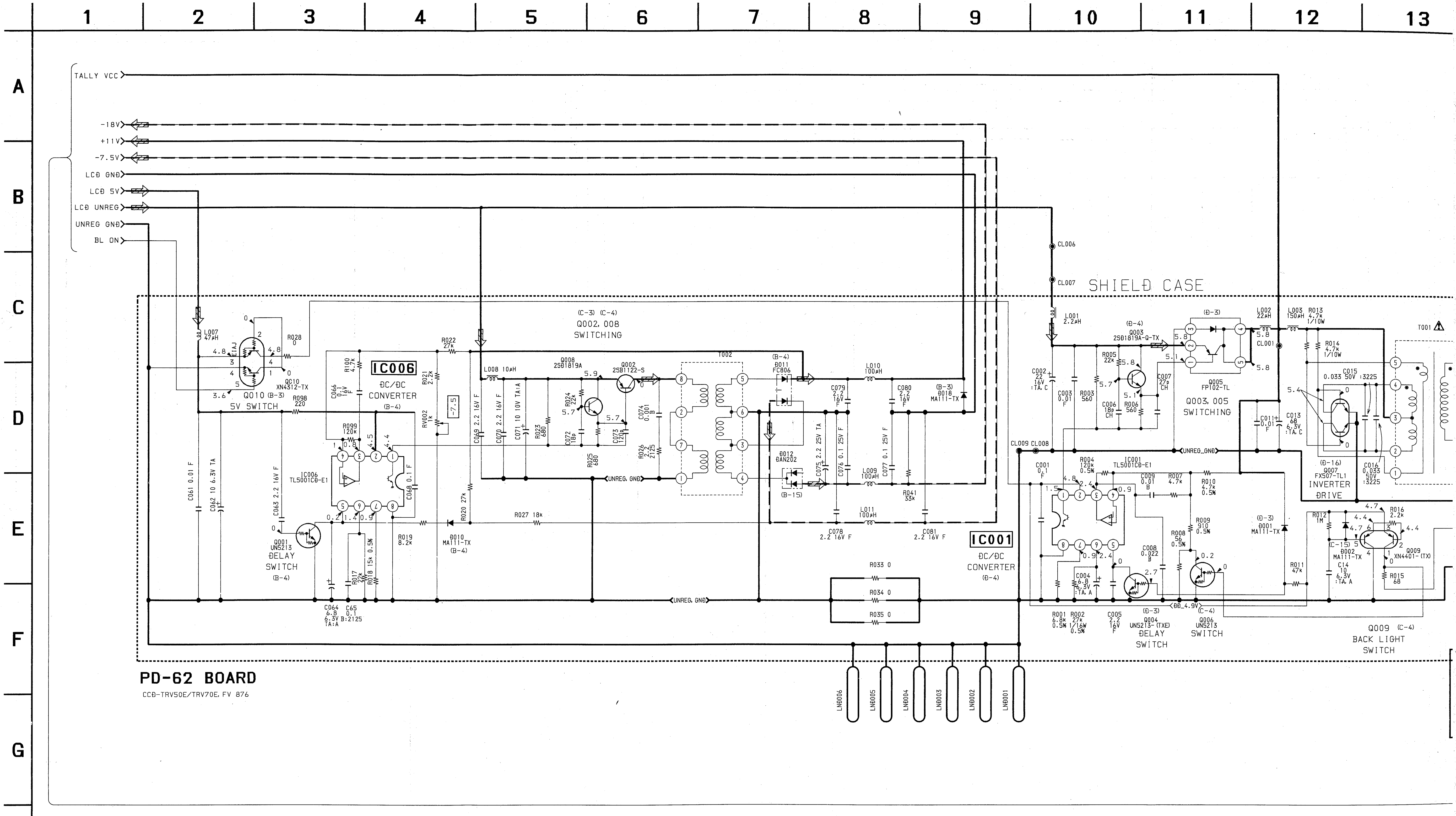


PD-62 (4" LCD DRIVE) SCHEMATIC DIAGRAM

— Ref. No. PD-62 BOARD: 6000 series —

PD-62BOARD





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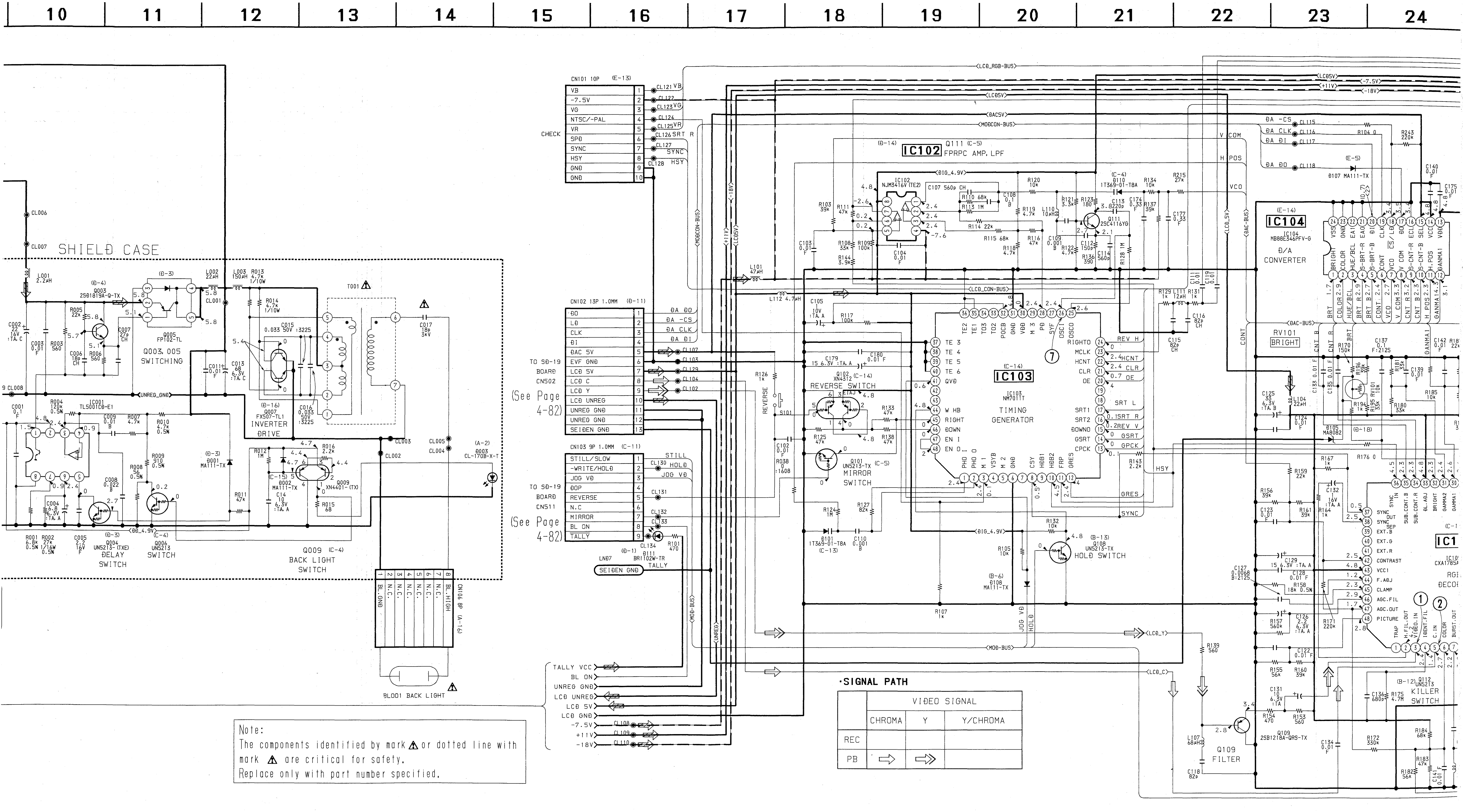
A
B
C
D
E
F
G
H
TALLY VCC
-18V
+11V
-7.5V
LCD GND
LCD 5V
LCD UNREG
UNREG GND
BL ON
CL006
CL007
SHIELD CASE
L007 47μH
Q010 (B-3)
XN4312-TX
5V SWITCH
R028 0
R098 220
R022 27k
R100 4.7k
IC006
DC/DC CONVERTER
(B-4)
R021 2.2k
RV002 1k
-7.5
R099 120k
IC006 TLS001CD-E1
C066 0.1 16V F
C068 0.1 F
C061 0.01 F
C062 10 6.3V TA
C063 2.2 16V F
Q001 UN5213
DELAY SWITCH
(B-4)
C064 6.8 6.3V TA:A
C65 0.1 B:2125
R017 22k
R018 15k 0.5%
R019 8.2k
D010 MA111-TX (B-4)
R020 27k
R027 18k
(C-3) (C-4)
Q002, 008
SWITCHING
L008 10μH
Q008 2SB1819A
Q002 2SB1122-S
C069 2.2 16V F
C070 2.2 16V F
C071 10 10V TA:A
R023 680
R024 22k
C072 18p
R025 680
C073 120p
C074 0.001 B
R026 2.2k
UNREG. GND
T002
(B-4)
D011 FC806
D012 DAN202
(B-15)
C075 2.2 25V TA
C076 0.1 25V F
C079 2.2 16V F
L010 100μH
C080 2.2 16V F
(B-3) D018 MA111-TX
L009 100μH
C077 0.1 25V F
R041 33k
L011 100μH
C078 2.2 16V F
C081 2.2 16V F
IC001
DC/DC CONVERTER
(B-4)
R033 0
R034 0
R035 0
LND006
LND005
LND004
LND003
LND002
LND001
PD-62 BOARD
CCD-TRV50E/TRV70E, FV 876
L001 2.2μH
C002 22 16V TA:C
C003 0.01 F
R003 560
(B-4) Q003 2SB1819A-Q-TX
R005 22k
C006 18p CH
R006 560
C007 27p CH
Q005 FP102-TL
Q003, 005 SWITCHING
(B-3)
L002 22μH
CL001
L003 150μH
R013 4.7k
R014 4.7k 1/10W
T001 ⚠
C015 0.033 50V :3225
C011 0.01 F
C013 68 6.3V TA:C
(B-16) Q007 FX507-TL1
INVERTER DRIVE
C016 0.033 50V :3225
CL009 CL008
UNREG_GND
C001 0.1 F
R004 120k 0.5%
IC001 TLS001CD-E1
C009 0.01 B
R007 4.7k
R010 4.7k 0.5%
R009 910 0.5%
R008 56 0.5%
C008 0.022 B
C004 6.8 6.3V TA:A
(D-3) D001 MA111-TX
R012 1M
(C-15) D002 MA111-TX
C14 10 6.3V TA:A
Q009 XN4401-(TX)
R016 2.2k
R015 68
R011 47k
R001 6.8k 0.5%
R002 27k 1/16W 0.5%
C005 2.2 16V F
(D-3) Q004 UN5213-(TXE)
DELAY SWITCH
BD_4.9V (C-4)
Q006 UN5213
SWITCH
Q009 (C-4)
BACK LIGHT SWITCH
09

Note:
The components identified b
mark ⚠ are critical for s
Replace only with part numb


10
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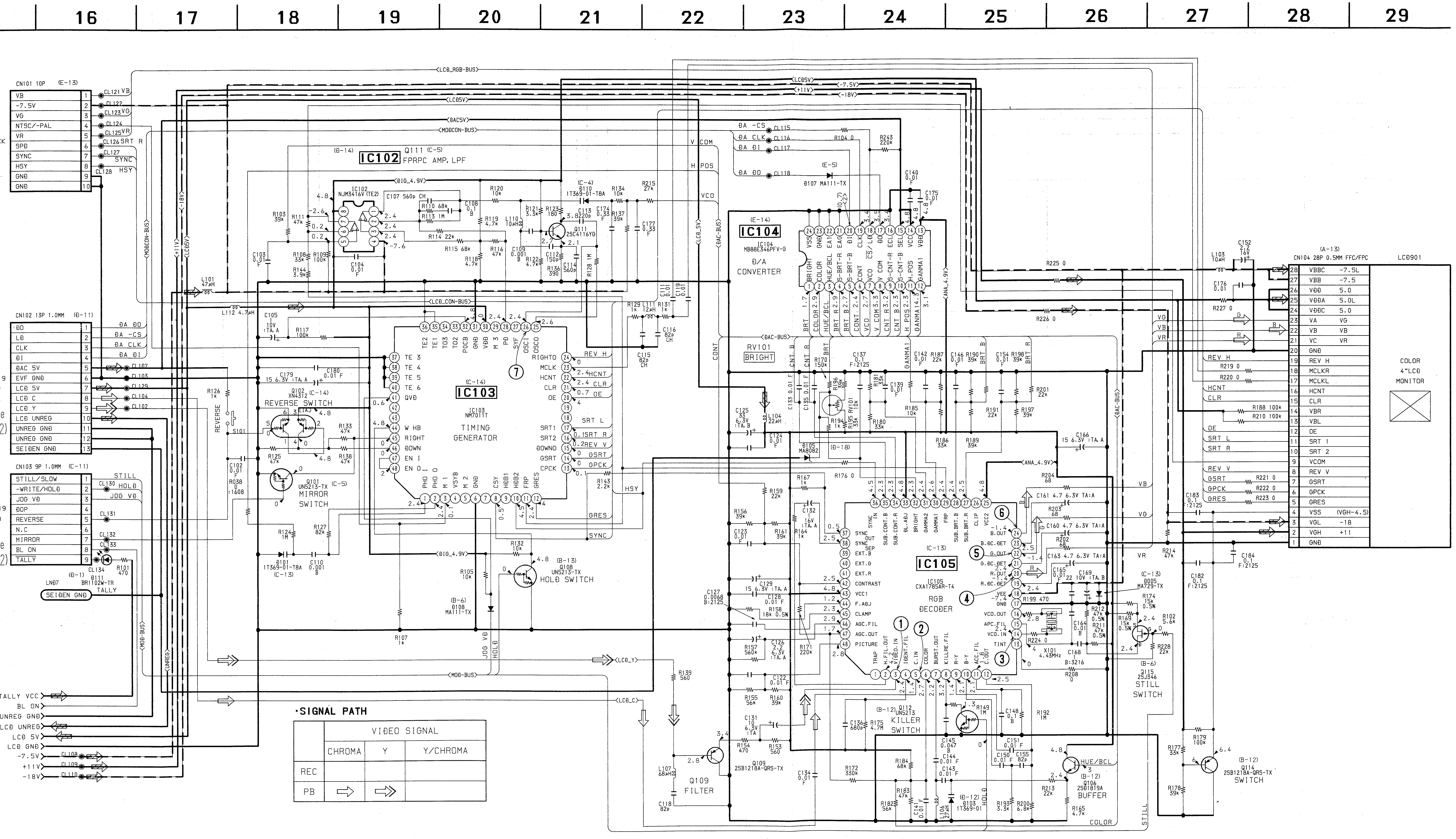
23
24
SHIELD CASE
Q003, 005 SWITCHING
Q007 INVERTER DRIVE
T001
Q009 BACK LIGHT SWITCH
Q004 DELAY SWITCH
Q006 SWITCH
IC001 TL5001CD-E1
CN106 8P
BL001 BACK LIGHT
CN101 10P
CHECK
CN102 13P 1.0MM
TO SD-19 BOARD CN502 (See Page 4-82)
CN103 9P 1.0MM
TO SD-19 BOARD CN511 (See Page 4-82)
D111 TALLY
SEIDEN GND
IC102 FPRPC AMP, LPF
IC102 NJM3416V (TE2)
Q111 2SC4116YG
Q102 REVERSE SWITCH
Q101 MIRROR SWITCH
S101 REVERSE
IC103 NM7011T TIMING GENERATOR
Q108 HOLD SWITCH
IC104 MB88E346PFV-G D/A CONVERTER
RV101 BRIGHT
Q109 FILTER
Q112 KILLER SWITCH
LCD_RGB-BUS
LCD5V
BAC5V
MODCON-BUS
DIG_4.9V
LCD_CON-BUS
DAC-BUS
MOD-BUS
LCD_Y
LCD_C
TALLY VCC
BL ON
UNREG GND
LCD UNREG
LCD 5V
LCD GND
-7.5V
+11V
-18V

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

·SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			
PB	⇨	⇛	


16
17
18
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21
22
23
24
25
26
27
28
29
CN101 10P (E-13)
VB
-7.5V
VG
NTSC/-PAL
VR
SPD
SYNC
HSY
GND
GND
CN102 13P 1.0MM (D-11)
DD
LD
CLK
DI
DAC 5V
EVF GND
LCD 5V
LCD C
LCD Y
LCD UNREG
UNREG GND
UNREG GND
SEIDEN GND
CN103 9P 1.0MM (C-11)
STILL/SLOW
-WRITE/HOLD
JOG VD
DOP
REVERSE
N.C
MIRROR
BL ON
TALLY
SEIDEN GND
LN07
TALLY
IC102
NJM3416V (TE2)
Q111 (C-5)
IC102 FPRPC AMP, LPF
Q111 2SC4116YG
D110 1T369-01-TBA
IC103
NM7011T
TIMING GENERATOR
Q102 XN4312 (C-14)
REVERSE SWITCH
S101
REVERSE
Q101 UN5213-TX (C-5)
MIRROR SWITCH
D101 1T369-01-TBA (C-13)
Q108 UN5213-TX
HOLD SWITCH
D108 MA111-TX
D111 BR1102W-TR
IC104
MB88E346PFV-G
D/A CONVERTER
RV101 BRIGHT
D107 MA111-TX
D105 MA8082
IC105
CXA1785AR-T4
RGB DECODER
X101 4.43MHz
Q109 2SB1218A-QRS-TX
Q109 FILTER
Q112 UN5213
KILLER SWITCH
D103 1T369-01
Q106 2SB1819A
HUE/BCL BUFFER
Q115 2SJ346
STILL SWITCH
D005 MA729-TX
Q114 2SB1218A-QRS-TX
SWITCH
CN104 28P 0.5MM FFC/FPC (A-13)
LCD901
COLOR 4"LCD MONITOR
VBBC -7.5L
VBB -7.5
VDD 5.0
VDDA 5.0L
VDDC 5.0
VA VG
VB VB
VC VR
GND
REV H
MCLKR
MCLKL
HCNT
CLR
VBR
VBL
OE
SRT 1
SRT 2
VCOM
REV V
GSRT
GPCK
GRES
VSS (VGH-4.5)
VGL -18
VGH +11
GND
<LCD_RGB-BUS>
<LCD5V>
<-7.5V>
<+11V>
<-18V>
<DAC5V>
<MODCON-BUS>
<BIG_4.9V>
<LCD_CON-BUS>
<DAC-BUS>
<ANA_4.9V>
<MOD-BUS>
<LCD_Y>
<LCD_C>
TALLY VCC
BL ON
UNREG GND
LCD UNREG
LCD 5V
LCD GND
-7.5V
+11V
-18V
JOG VD
HOLD
CONT
STILL
COLOR

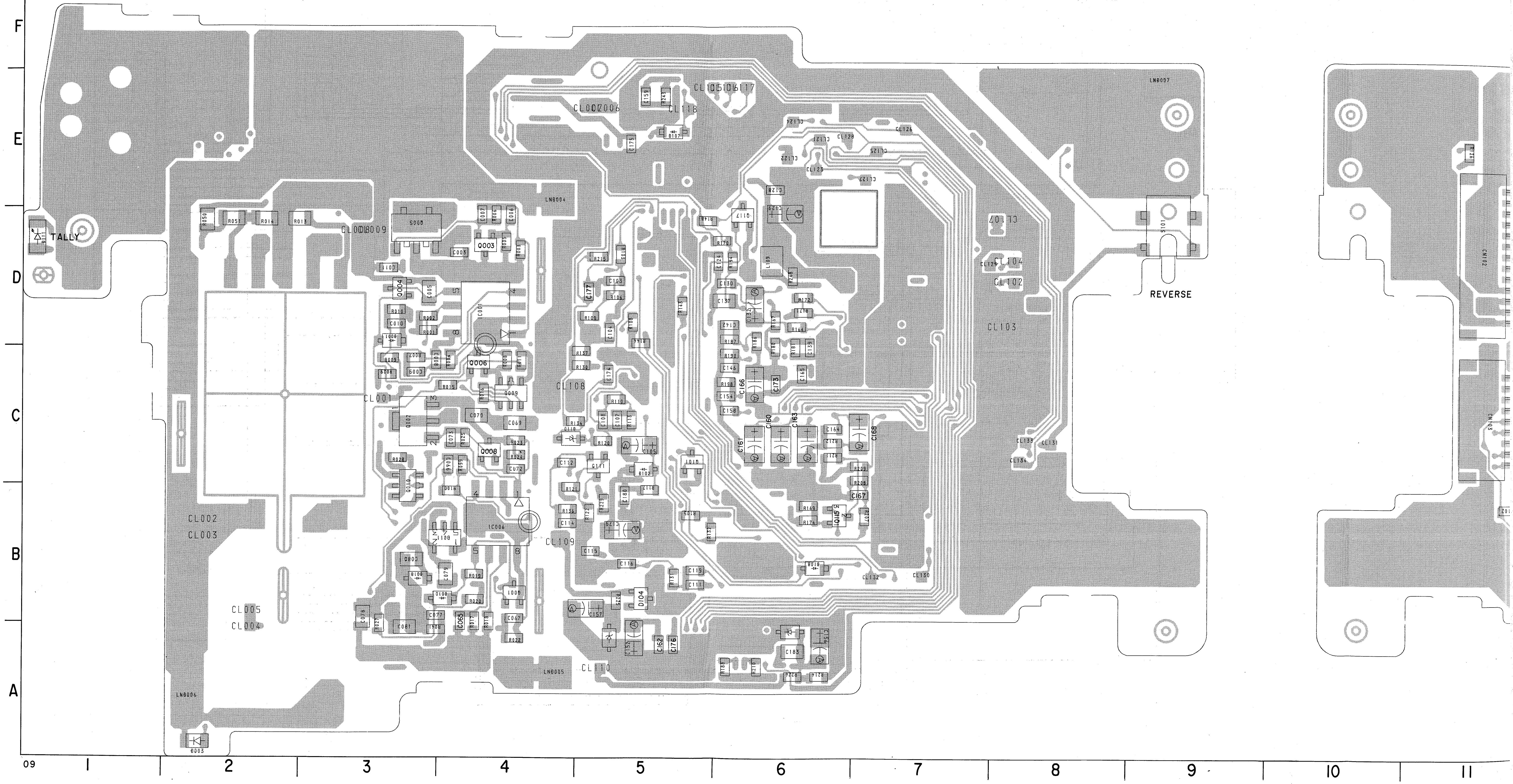
·SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			
PB	⇨	⇛	

PD-62 (4" LCD DRIVE) PRINTED WIRING BOARD

— Ref. No. PD-62 BOARD: 6000 series —

PD-62 BOARD (CONDUCTOR SIDE)


F
E
D
C
B
A
09
1
2
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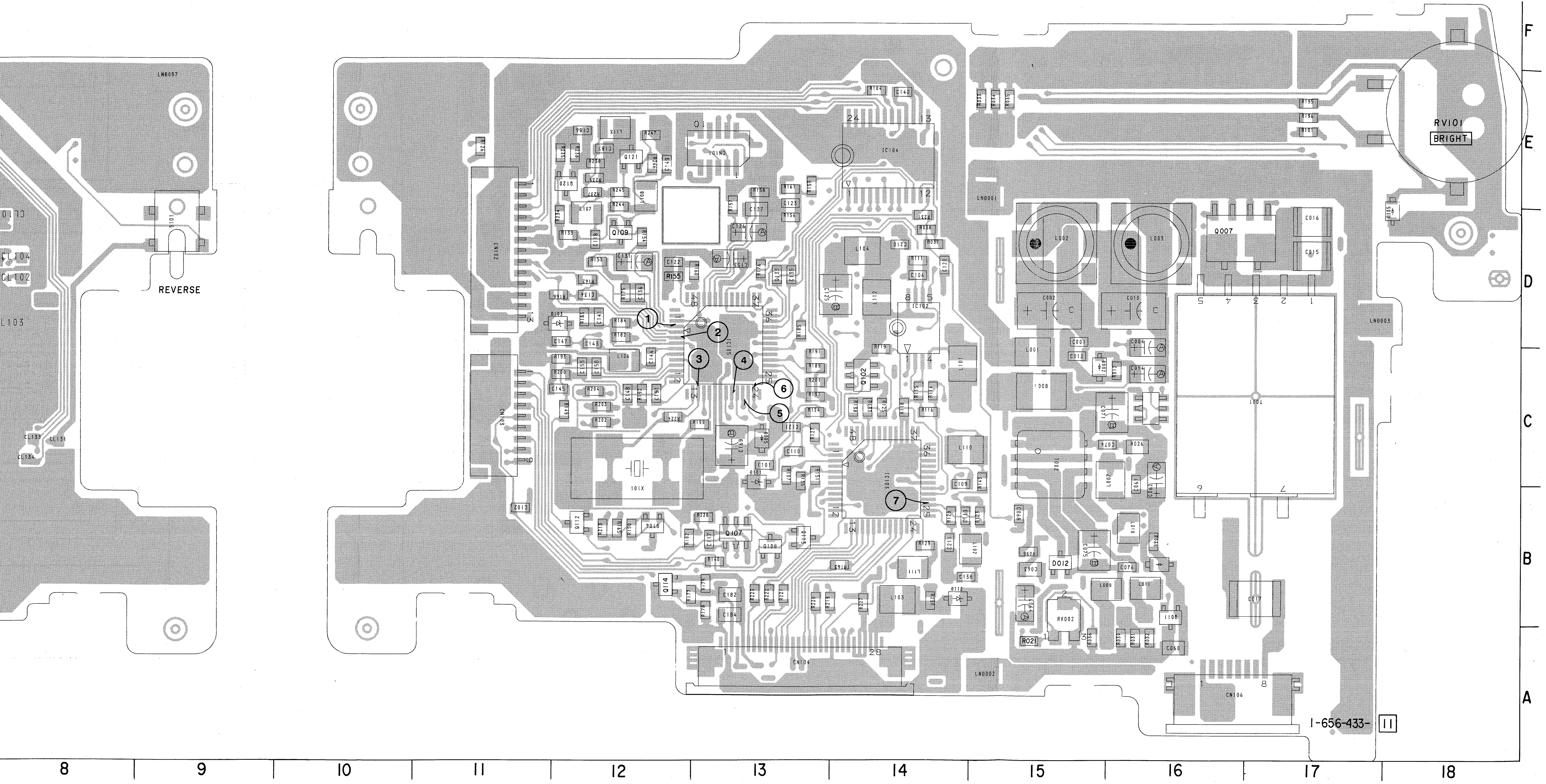
5
6
7
8
9
10
11
TALLY
REVERSE
LN8007
LN8004
LN8005
LN8006
CL001
CL002
CL003
CL004
CL005
CL108
CL109
CL110
CL103
CL102
CL104
CL118
CL130
CL132
IC001
IC006
Q003
Q004
Q006
Q008
Q009
Q015
D104
S101
CN102
CN103
C161
C160
C163
C166
C168
C173
C177
C162
C176
C065
C167
C164
C183
D003

PD-62 BOARD (COMPONENT SIDE)


REVERSE
S101
RV101
BRIGHT
IC101
IC102
IC103
IC104
CN102
CN103
CN104
CN106
X101
T001
L002
L003
Q007
Q102
Q107
Q109
Q121
D012
RV002
R155
R021
LN8001
LN8002
LN8003
1-656-433-
11
F
E
D
C
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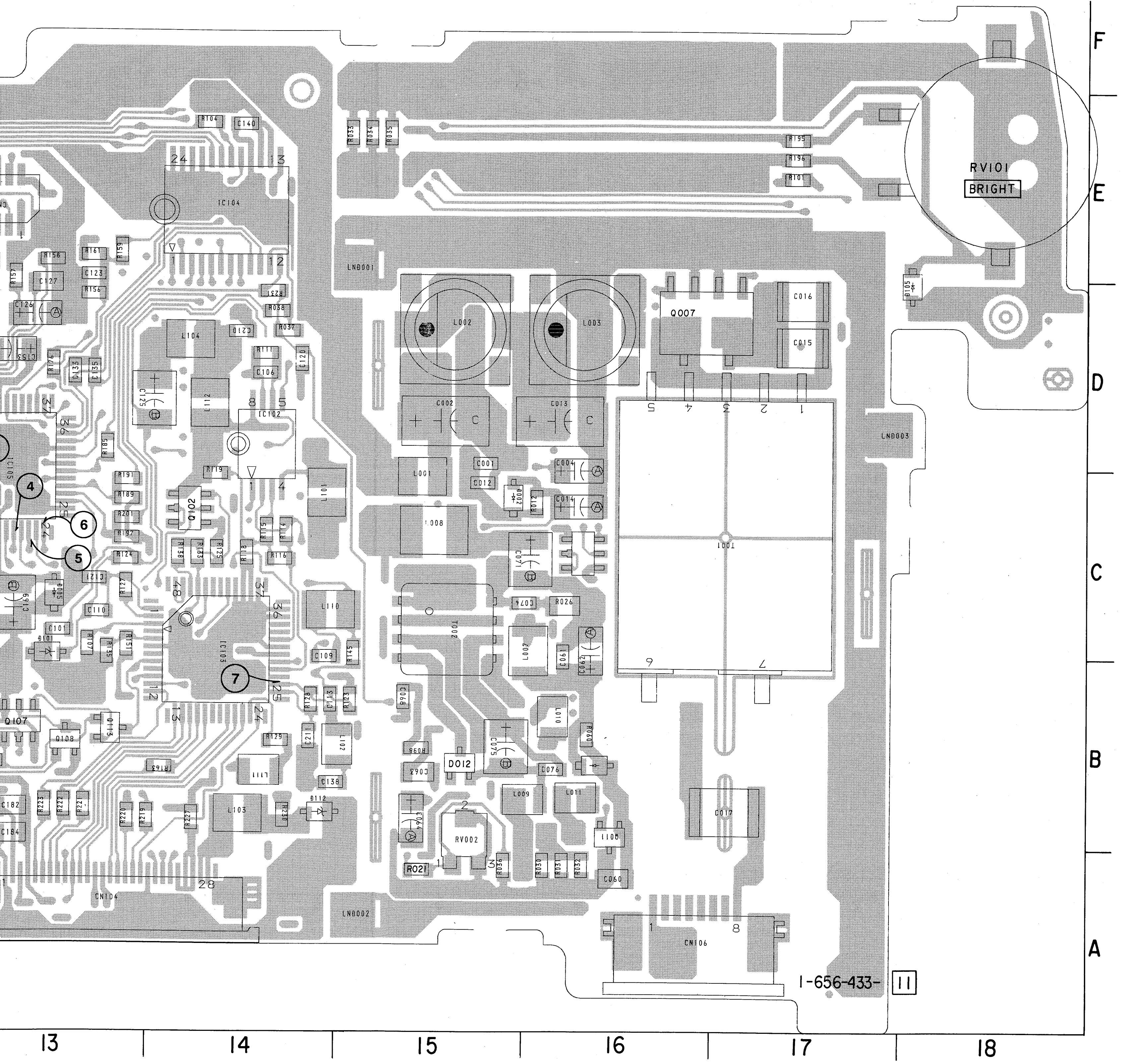
18

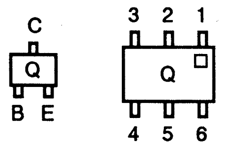
PD-62 BOARD (COMPONENT SIDE)

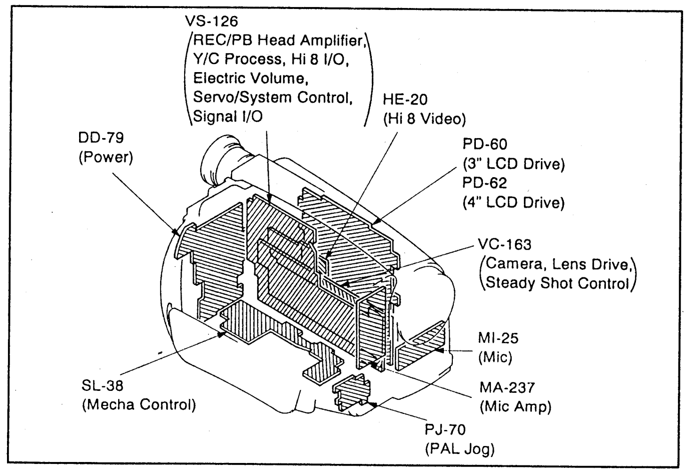

RV101
BRIGHT
IC104
IC102
IC103
Q007
L002
L003
C016
C015
C002
C013
L001
L008
T001
T002
D012
RV002
R021
C017
CN106
CN104
LN0001
LN0002
LN0003
1-656-433- 11
F
E
D
C
B
A
13
14
15
16
17
18

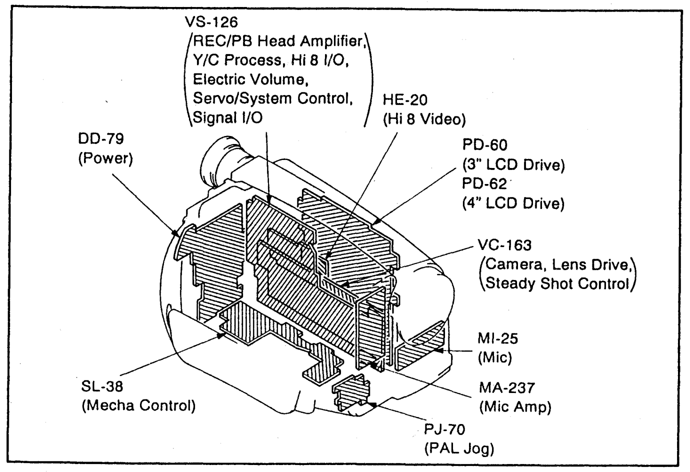
PD-62 BOARD

C001	D-15
C002	D-15
C003	D-4
C004	C-16
C005	D-3
C006	D-4
C007	D-4
C008	C-3
C009	C-3
C011	D-3
C013	D-16
C014	C-16
C015	D-17
C016	D-17
C017	B-17
C061	C-16
C062	C-16
C063	B-15
C064	B-15
C065	A-4
C066	C-4
C068	B-15
C069	C-4
C070	C-4
C071	C-16
C072	C-4
C073	C-4
C074	C-16
C075	B-15
C076	B-16
C077	B-4
C078	B-3
C079	B-4
C080	B-3
C081	A-3
C102	B-11
C105	C-5
C107	C-5
C108	C-5
C109	B-14
C111	B-5
C112	C-4
C113	B-14
C114	B-4
C115	B-5
C116	B-5
C118	D-12
C119	B-5
C124	D-6
C125	D-14
C126	D-13
C129	D-6
C131	D-12
C132	D-6
C136	D-12
C137	D-6
C144	C-12
C145	C-12
C146	C-6
C148	C-12
C151	C-12
C152	A-5
C154	C-6
C155	C-12
C160	C-6
C161	C-6
C163	C-6
C164	C-6
C165	C-6
C166	C-6
C168	C-7
C169	C-13
C174	C-5
C175	E-5
C176	A-5
C177	D-5
C179	B-5
C180	B-5
C182	B-13
C183	A-6
C184	B-13
CN101	E-13
CN102	D-11
CN103	C-11
CN104	A-13
CN106	A-16
D001	D-3
D002	C-15
D003	A-2
D005	C-13
D010	B-4
D011	B-4
D012	B-15
D018	B-3
D101	C-13
D103	D-12
D105	D-18
D107	E-5
D108	B-6
D110	C-4
D111	D-1
IC001	D-4
IC006	B-4
IC102	D-14
IC103	C-14
IC104	E-14
IC105	C-13
L001	C-15
L002	D-15
L003	D-16
L007	C-16
L008	C-15
L009	B-16
L010	B-16
L011	B-16
L101	C-14
L103	B-14
L104	D-14
L106	C-12
L107	D-12
L110	C-14
L111	B-14
L112	D-14
Q001	B-4
Q002	C-3
Q003	D-4
Q004	D-3
Q005	D-3
Q006	C-4
Q007	D-16
Q008	C-4
Q009	C-4
Q010	B-3
Q101	C-5
Q102	C-14
Q106	B-12
Q108	B-13
Q109	D-12
Q111	C-5
Q112	B-12
Q114	B-12
Q115	B-6
R001	D-3
R002	D-3
R003	D-4
R004	C-4
R005	D-4
R006	D-4
R007	C-3
R008	C-4
R009	C-3
R010	D-3
R011	C-4
R012	C-16
R013	D-2
R014	D-2
R015	C-4
R016	C-4
R017	A-4
R018	A-4
R019	B-4
R020	B-4
R021	A-15
R022	A-4
R023	C-4
R024	C-4
R025	C-4
R026	C-16
R027	A-3
R033	E-15
R034	E-15
R035	E-15
R038	D-14
R041	A-4
R098	B-15
R099	C-4
R100	B-4
R101	E-17
R102	B-12
R103	D-5
R104	E-14
R105	B-5
R107	C-13
R108	D-5
R109	D-5
R110	C-5
R111	D-14
R113	C-5
R114	C-14
R115	C-14
R116	C-14
R117	B-5
R118	C-14
R119	C-14
R120	C-5
R121	B-4
R122	B-5
R123	B-15
R124	C-13
R125	C-14
R126	E-11
R127	C-13
R128	B-14
R129	B-14
R131	B-5
R132	B-5
R133	C-14
R134	C-4
R136	B-4
R137	C-5
R138	C-14
R139	D-12
R143	D-5
R144	D-5
R149	C-12
R153	D-12
R154	D-12
R155	D-12
R156	D-13
R157	D-13
R158	E-13
R159	E-13
R160	D-13
R161	E-13
R164	D-6
R165	B-12
R167	D-6
R169	B-6
R170	D-6
R171	D-6
R172	D-6
R174	B-6
R175	D-12
R176	D-13
R177	B-13
R178	B-13
R179	B-13
R180	C-6
R181	C-6
R182	D-12
R183	D-12
R184	D-12
R185	D-13
R186	D-6
R188	A-6
R189	C-13
R190	C-6
R191	C-13
R192	C-12
R193	C-12
R194	D-6
R196	E-17
R197	C-13
R198	C-6
R199	C-13
R200	C-12
R201	C-13
R202	C-12
R203	C-12
R204	C-12
R208	C-7
R210	A-6
R211	C-6
R212	C-6
R213	B-12
R214	A-6
R215	D-5
R219	B-14
R220	B-13
R221	B-13
R222	B-13
R223	B-13
R224	C-12
R225	B-5
R226	A-6
R227	B-14
R228	B-13
R229	B-5
R243	E-5
RV002	B-15
RV101	E-18
S101	D-9
T001	C-17
T002	C-15
X101	C-12

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor


C
Q
B E
3 2 1
Q
4 5 6


VS-126
(REC/PB Head Amplifier, Y/C Process, Hi 8 I/O, Electric Volume, Servo/System Control, Signal I/O)
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive, Steady Shot Control)
MI-25
(Mic)
MA-237
(Mic Amp)
SL-38
(Mecha Control)
PJ-70
(PAL Jog)

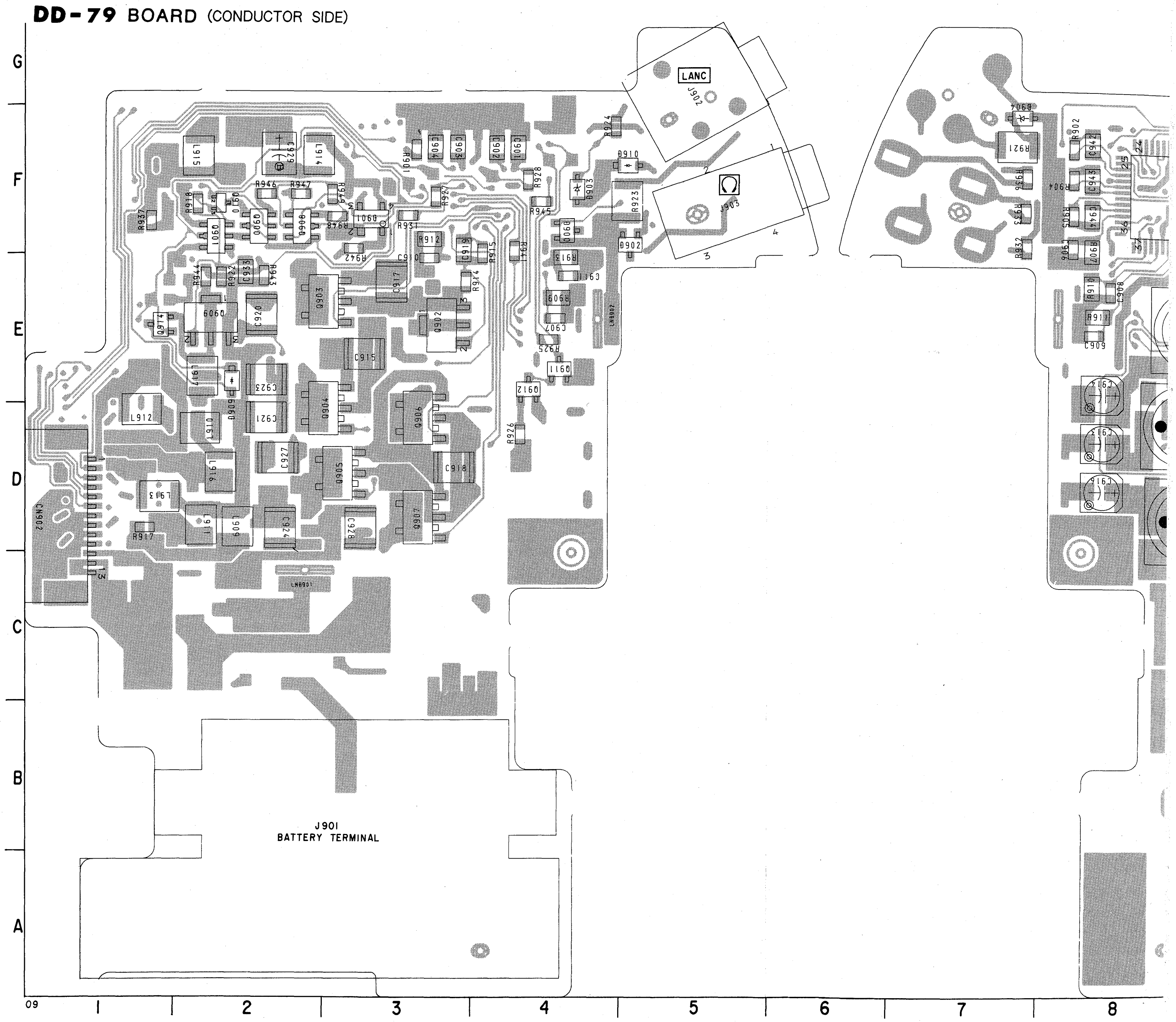

VS-126
REC/PB Head Amplifier, Y/C Process, Hi 8 I/O, Electric Volume, Servo/System Control, Signal I/O
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
Camera, Lens Drive, Steady Shot Control
MI-25
(Mic)
MA-237
(Mic Amp)
SL-38
(Mecha Control)
PJ-70
(PAL Jog)

DD-79 BOARD

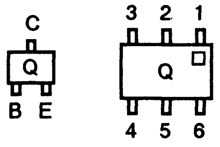
C901	F-4
C902	F-4
C903	F-3
C904	F-3
C906	F-8
C907	E-4
C908	E-8
C909	E-8
C910	E-3
C911	E-4
C912	C-10
C913	D-8
C914	E-8
C915	E-3
C916	D-8
C917	E-3
C918	D-3
C920	E-2
C921	D-2
C923	E-2
C924	D-2
C925	F-10
C926	F-9
C927	D-2
C928	D-3
C929	F-2
C930	F-10
C931	D-10
C932	D-10
C934	E-10
C935	D-11
C936	E-10
C937	D-11
C938	E-10
C939	F-9
C940	F-9
C941	F-9
C942	F-8
C943	F-8
C944	F-8
C945	C-10
C950	F-10
CN901	D-11
CN902	D-1
D901	F-3
D909	E-2
D910	F-5
IC901	F-8
J901	A-2
J902	G-5
J903	F-5
L901	D-8
L902	E-9
L903	D-8
L904	E-10
L905	E-10
L906	E-9
L907	D-9
L908	D-10
L909	D-2
L910	D-2
L911	D-2
L912	D-1
L913	D-1
L914	F-2
L915	F-2
L916	D-2
L917	E-2
PS251	B-9
PS252	B-9
PS253	B-10
PS254	B-10
Q901	F-2
Q902	E-3
Q903	E-2
Q904	D-3
Q905	D-3
Q906	D-3
Q907	D-3
Q909	E-2
Q914	E-1
Q915	F-10
R901	F-3
R902	F-8
R903	F-9
R904	F-8
R905	F-8
R906	F-9
R907	F-8
R908	F-9
R909	E-4
R910	E-8
R911	E-8
R912	F-3
R913	E-4
R915	E-4
R918	F-2
R919	F-9
R920	F-9
R921	F-7
R922	E-2
R923	F-5
R924	F-4
R925	E-4
R927	F-3
R928	F-4
R931	F-3
R932	F-7
R933	F-7
R936	F-7
R937	F-1
R938	F-10
R940	F-9
R941	E-4
R942	F-3
R944	E-2
R945	F-4
T901	E-9

DD-79 (POWER) PRINTED WIRING BOARD

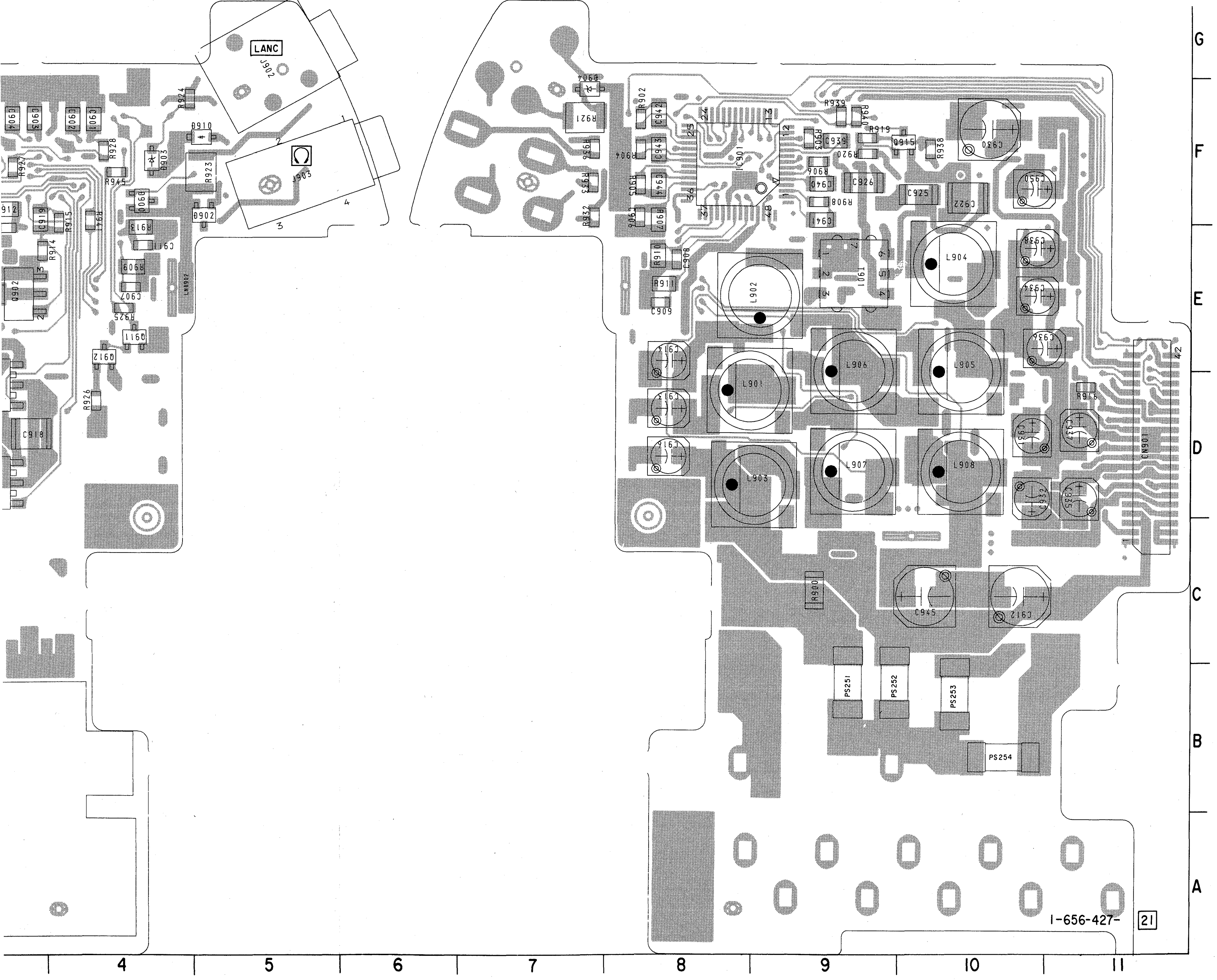
DD-79 BOARD (CONDUCTOR SIDE)


G
F
E
D
C
B
A
09
1
2
3
4
5
6
7
8
LANC
J902
J903
J901
BATTERY TERMINAL
CN902
L912
L914
L915
L916
L917
L910
L913
Q901
Q902
Q903
Q904
Q905
Q906
Q907
Q909
Q914
C915
C918
C920
C921
C923
C927
C928
R902
R904
R910
R911
R917
R921
R923
R924
R926
R928
R937
R945
C909
C942
C943

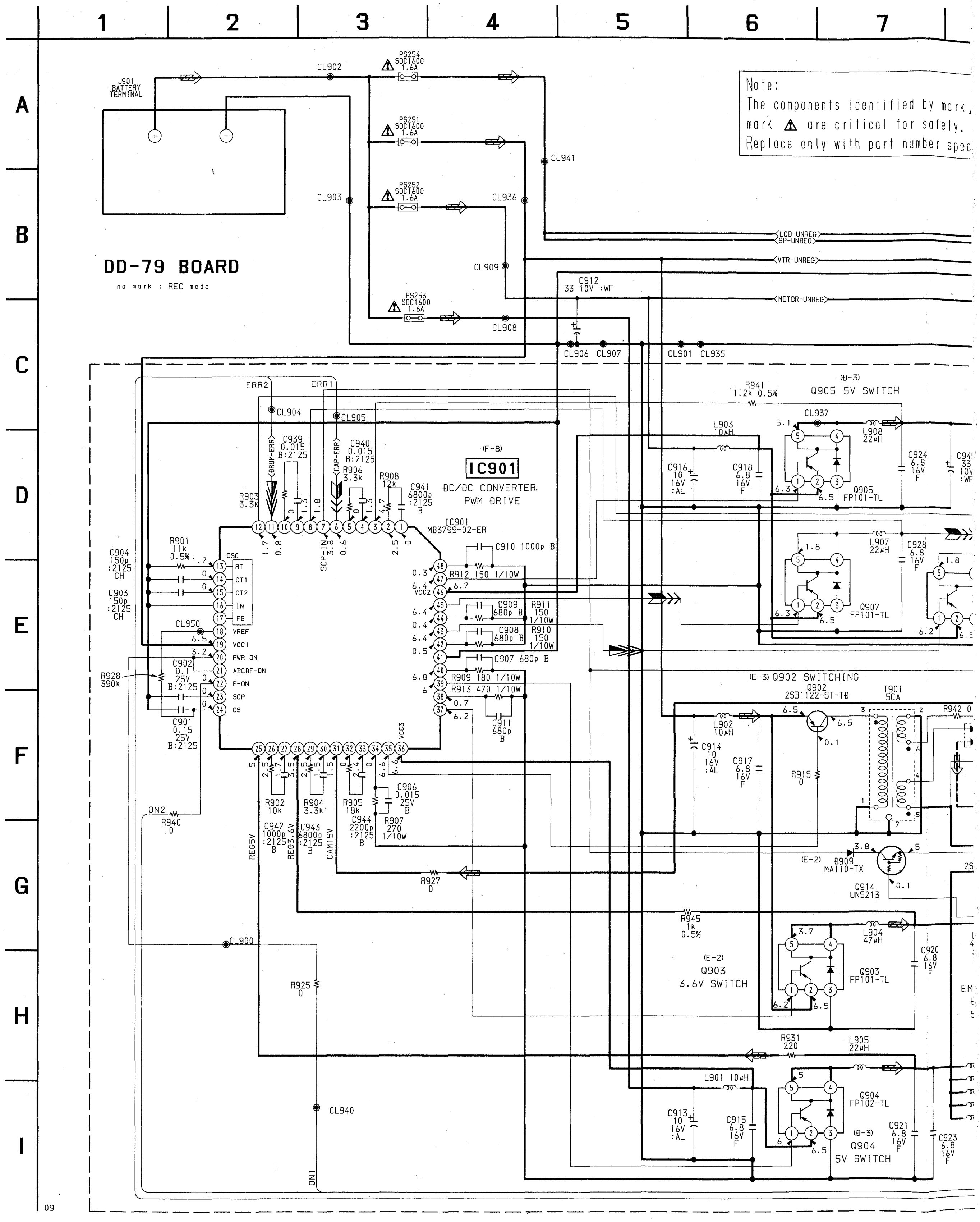
- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor


C
Q
B
E
3
2
1
Q
4
5
6

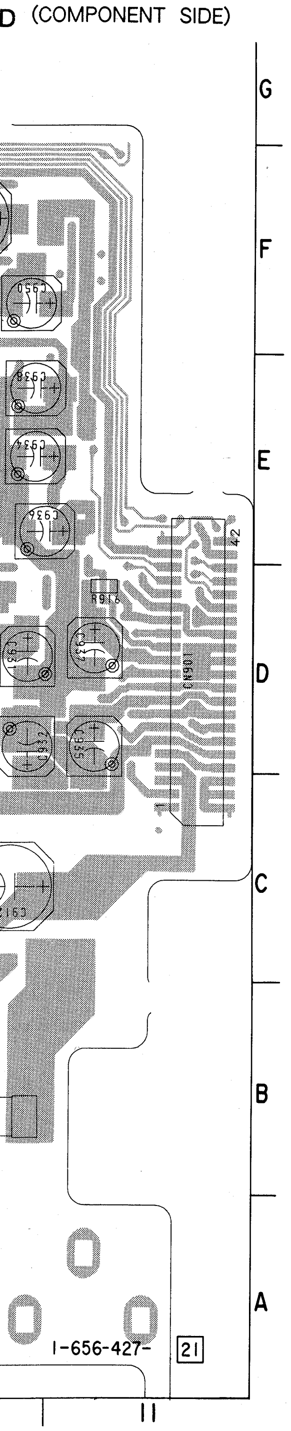
DD-79 BOARD (COMPONENT SIDE)


LANC
J902
J903
IC901
L901
L902
L903
L904
L905
L906
L907
L908
PS251
PS252
PS253
PS254
1-656-427-
21
G
F
E
D
C
B
A
4
5
6
7
8
9
10
11

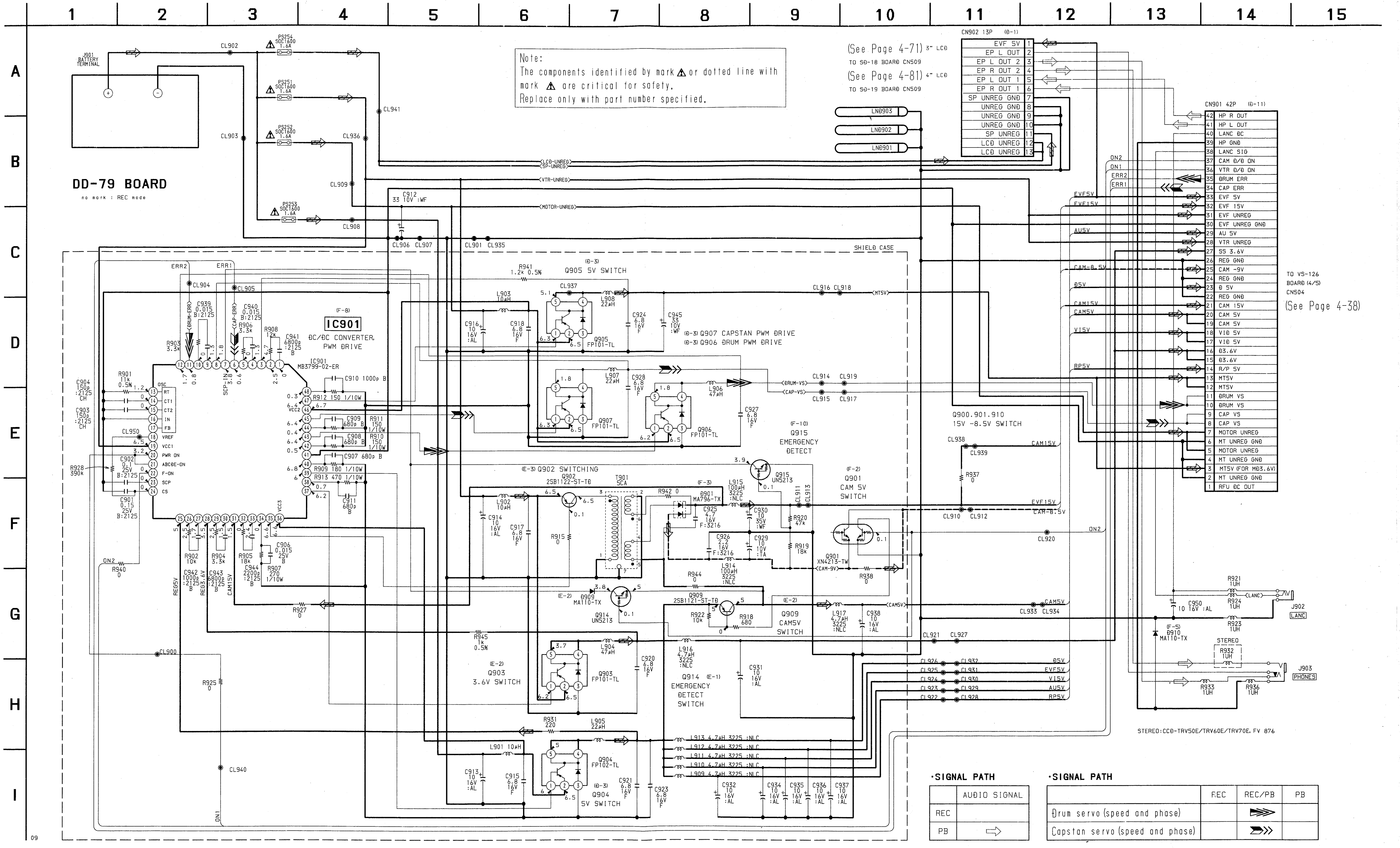
DD-79 (POWER) SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J901 BATTERY TERMINAL
DD-79 BOARD
no mark : REC mode
CL902
PS254 SOC1600 1.6A
PS251 SOC1600 1.6A
PS252 SOC1600 1.6A
PS253 SOC1600 1.6A
CL941
CL903
CL936
CL909
CL908
C912 33 10V :WF
LCD-UNREG
SP-UNREG
VTR-UNREG
MOTOR-UNREG
CL906
CL907
CL901
CL935
IC901
DC/DC CONVERTER, PWM DRIVE
IC901 MB3799-02-ER
Q905 5V SWITCH
Q905 FP101-TL
Q907 FP101-TL
Q902 SWITCHING
Q902 2SB1122-ST-TD
T901 SCA
D909 MA110-TX
Q914 UN5213
Q903 3.6V SWITCH
Q903 FP101-TL
Q904 FP102-TL
Q904 5V SWITCH
CL900
CL940
CL950
ERR2
ERR1
CL904
CL905
REG5V
REG3.6V
CAM15V
ON2
ON1

Note:
The components identified by mark,
mark ⚠ are critical for safety.
Replace only with part number spec


D (COMPONENT SIDE)
G
F
E
D
C
B
A
CN901
1-656-427-
21

DD-79 (POWER) SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J901 BATTERY TERMINAL
DD-79 BOARD
no mark : REC mode
PS254 SOC1600 1.6A
PS251 SOC1600 1.6A
PS252 SOC1600 1.6A
PS253 SOC1600 1.6A
CL902
CL903
CL941
CL936
CL909
CL908
C912 33 10V :WF
CL906 CL907
CL901 CL935
LCD-UNREG
SP-UNREG
VTR-UNREG
MOTOR-UNREG
SHIELD CASE
ERR2
ERR1
CL904
CL905
IC901
DC/DC CONVERTER, PWM DRIVE
IC901 MB3799-02-ER
Q905 5V SWITCH
Q907 CAPSTAN PWM DRIVE
Q906 DRUM PWM DRIVE
Q902 SWITCHING
Q902 2SB1122-ST-TD
T901 SCA
D901 MA796-TX
Q915 EMERGENCY DETECT
Q915 UN5213
Q901 CAM 5V SWITCH
Q901 XN4213-TW
Q900.901.910 15V -8.5V SWITCH
Q909 CAM5V SWITCH
Q909 2SB1121-ST-TD
D909 MA110-TX
Q914 UN5213
Q914 EMERGENCY DETECT SWITCH
Q903 3.6V SWITCH
Q904 5V SWITCH
D910 MA110-TX
CL914 CL919
CL915 CL917
CL916 CL918
CL910 CL912
CL920
CL933 CL934
CL921 CL927
CL900
CL940
DRUM-VS
CAP-VS
MT5V
CAM-9V
CAM5V
LANC
J902 LANC
J903 PHONES
STEREO
STEREO:CCD-TRV50E/TRV60E/TRV70E, FV 876
(See Page 4-71) 3" LCD
TO SD-18 BOARD CN509
(See Page 4-81) 4" LCD
TO SD-19 BOARD CN509
LND903
LND902
LND901
CN902 13P (D-1)
1 EVF 5V
2 EP L OUT
3 EP L OUT 2
4 EP R OUT 2
5 EP L OUT 1
6 EP R OUT 1
7 SP UNREG GND
8 UNREG GND
9 UNREG GND
10 UNREG GND
11 SP UNREG
12 LCD UNREG
13 LCD UNREG
ON2
ON1
ERR2
ERR1
EVF5V
EVF15V
AU5V
CAM-8.5V
D5V
CAM15V
CAM5V
VIS5V
RP5V
CN901 42P (D-11)
42 HP R OUT
41 HP L OUT
40 LANC DC
39 HP GND
38 LANC SIG
37 CAM D/D ON
36 VTR D/D ON
35 DRUM ERR
34 CAP ERR
33 EVF 5V
32 EVF 15V
31 EVF UNREG
30 EVF UNREG GND
29 AU 5V
28 VTR UNREG
27 SS 3.6V
26 REG GND
25 CAM -9V
24 REG GND
23 D 5V
22 REG GND
21 CAM 15V
20 CAM 5V
19 CAM 5V
18 VID 5V
17 VID 5V
16 D3.6V
15 D3.6V
14 R/P 5V
13 MT5V
12 MT5V
11 DRUM VS
10 DRUM VS
9 CAP VS
8 CAP VS
7 MOTOR UNREG
6 MT UNREG GND
5 MOTOR UNREG
4 MT UNREG GND
3 MT5V (FOR MD3.6V)
2 MT UNREG GND
1 RFU DC OUT
TO VS-126 BOARD (4/5) CN504
(See Page 4-38)
09

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

·SIGNAL PATH

	AUDIO SIGNAL
REC	
PB	⇨

·SIGNAL PATH

	REC	REC/PB	PB
Drum servo (speed and phase)		⋙	
Capstan servo (speed and phase)		⋙	

SECTION 5
REPAIR PARTS LIST

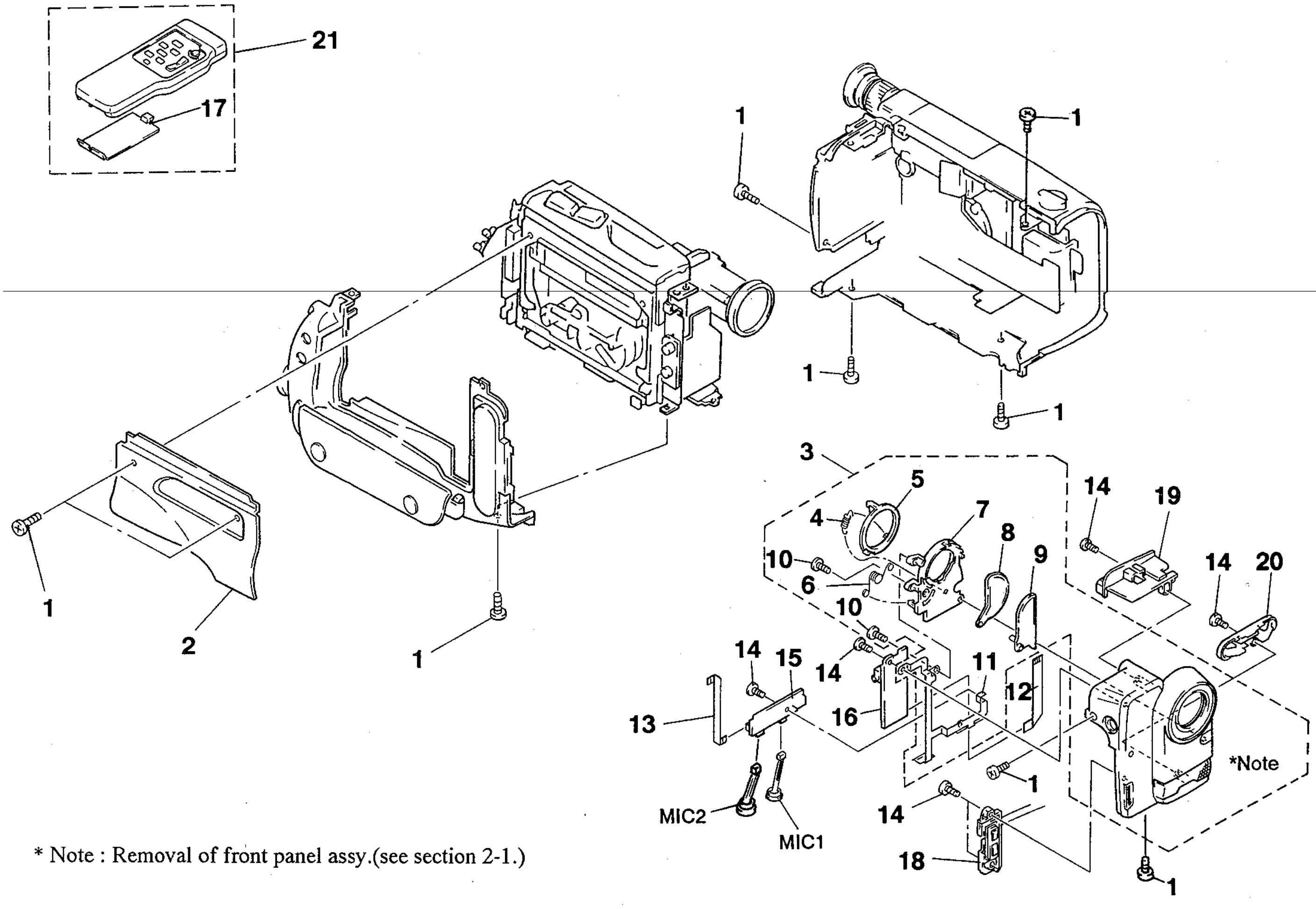
5-1. EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.
- Australian model is abbreviated as AUS.
  Hong Kong model is abbreviated as HK.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

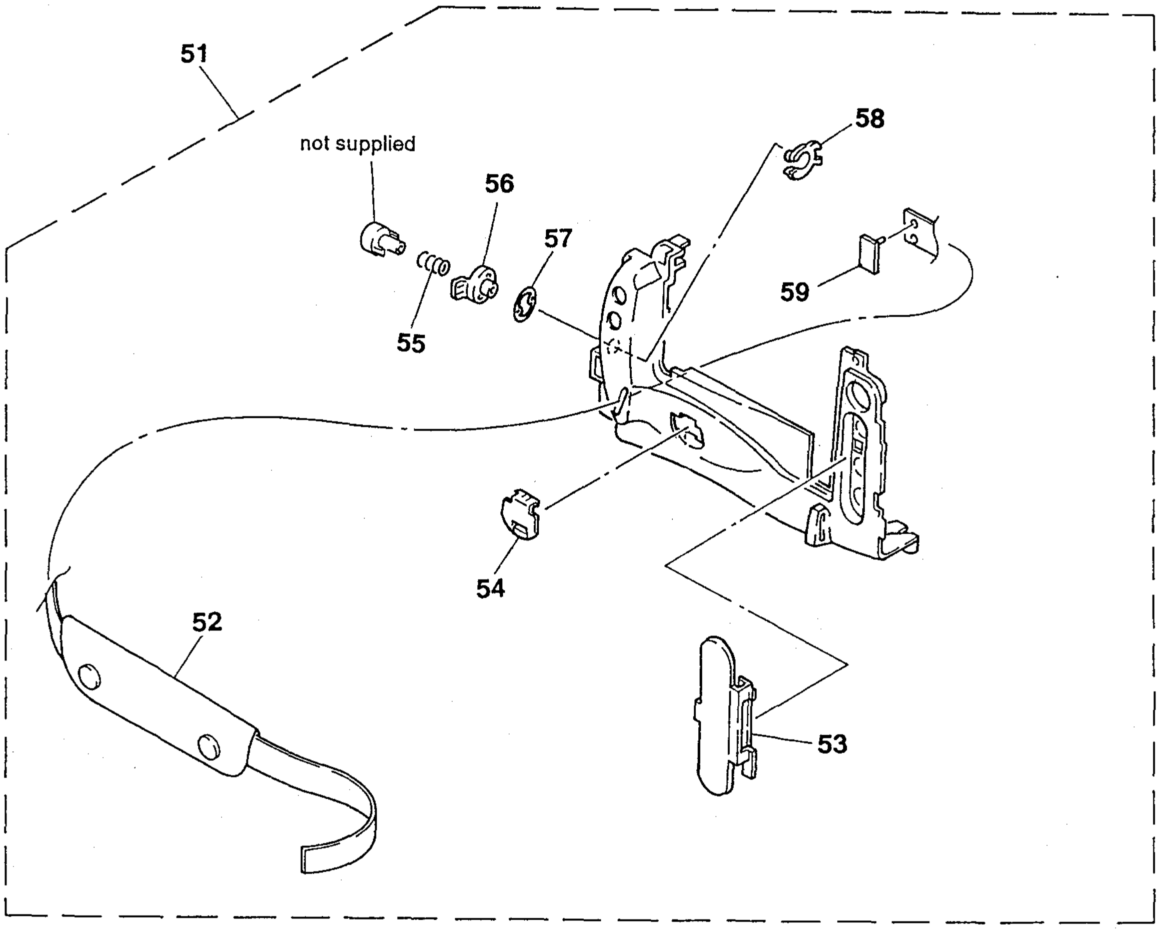
5-1-1. FRONT PANEL BLOCK ASSEMBLY



* Note : Removal of front panel assy.(see section 2-1.)

Ref. No.	Part No.	Description	Remark
1	3-719-381-01	SCREW (M2X4)	
2	X-3945-039-1	LID ASSY, CASSETTE (TRV30E/TRV50E)	
2	X-3945-106-1	LID ASSY (H), CASSETTE (TRV70E)	
3	X-3945-004-1	PANEL ASSY, FRONT (TRV30E)	
3	X-3945-092-1	PANEL ASSY, FRONT (TRV50E/TRV70E)	
4	3-307-378-00	SPRING, TENSION	
5	3-963-519-01	RING, DRIVING	
6	3-961-823-01	SPRING, L COVER	
7	3-963-518-01	RETAINER, LC	
8	3-963-517-01	LENS (2), COVER	
9	3-963-516-01	LENS (1), COVER	
10	3-719-601-01	SCREW (B2X5), TAPPING	
* 11	3-963-581-01	PLATE, GROUND, MICROPHONE	
12	1-769-729-11	CABLE, FLAT (FFC-153)	
13	1-769-730-11	CABLE, FLAT (FFC-154)	
14	3-948-339-01	SCREW, TAPPING	
15	A-7072-234-A	MI-25P (MO) BOARD, COMPLETE(TRV30E)	
15	A-7072-240-A	MI-25P (ST) BOARD, COMPLETE (TRV50E/TRV70E)	
16	A-7072-233-A	MA-237P (MO) BOARD, COMPLETE (TRV30E)	
16	A-7072-239-A	MA-237P (ST) BOARD, COMPLETE (TRV50E/TRV70E)	
17	3-958-131-01	LID, BATTERY CASE (for RMT-708)	
18	1-473-165-11	SWITCH BLOCK, CONTROL (ZOOM)	
19	3-963-524-01	BLIND, F PANEL	
20	3-963-520-01	HOLDER, MICROPHONE	
21	1-467-574-21	REMOTE COMMANDER (RMT-708)	
MIC1	1-542-259-11	MICROPHONE, CAP	
MIC2	1-542-259-11	MICROPHONE, CAP	

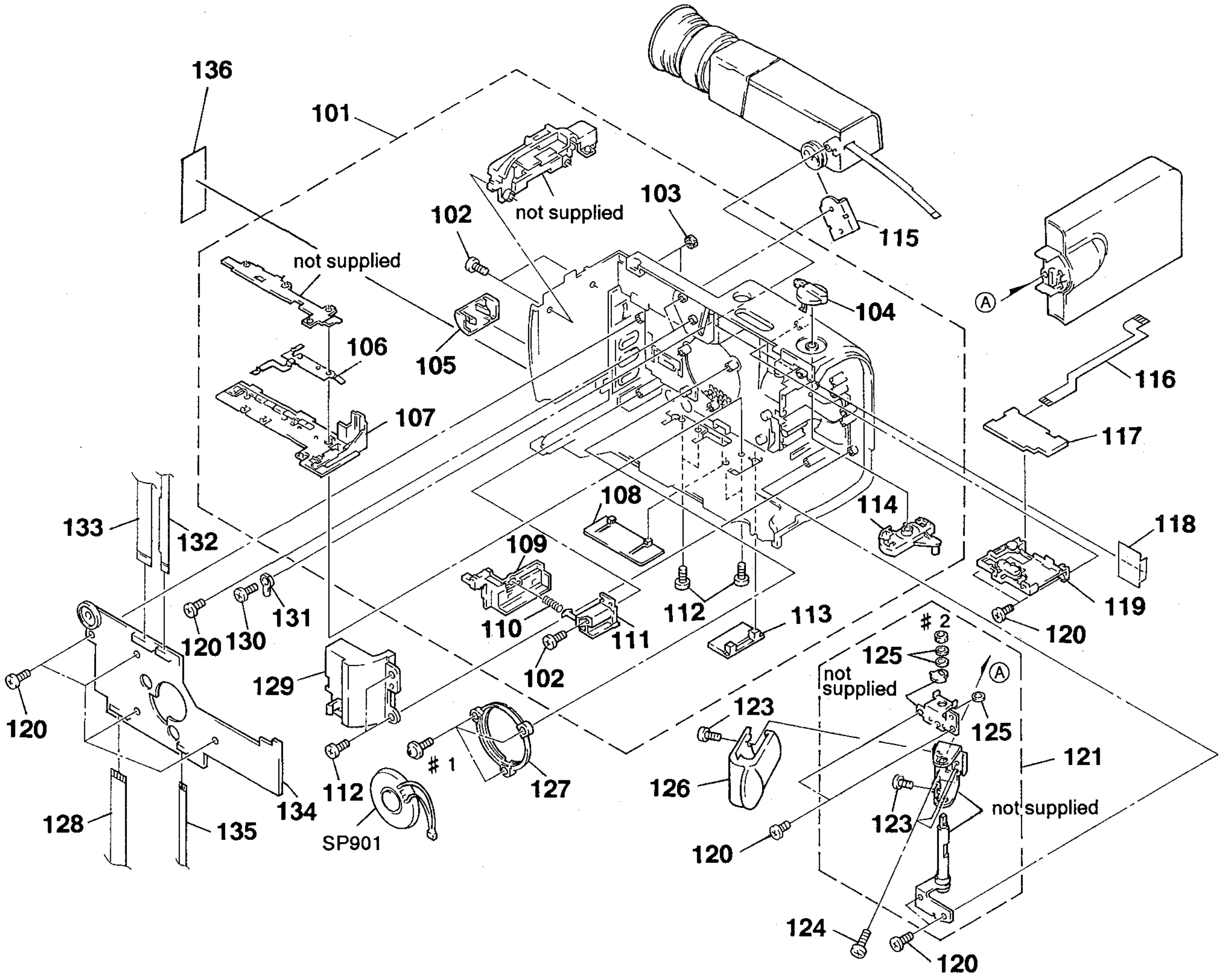
5-1-2. CABINET (L) BLOCK ASSEMBLY



Ref. No.	Part No.	Description	Remark
51	X-3945-038-1	CABINET (L) ASSY (TRV30E)	
51	X-3945-101-1	CABINET (L) ASSY (TRV70E)	
51	X-3945-102-1	CABINET (L) ASSY (TRV50E)	
52	3-736-807-01	BELT, GRIP	
53	3-958-606-11	COVER, JACK	
54	3-958-608-11	LID, LITHIUM POWER	

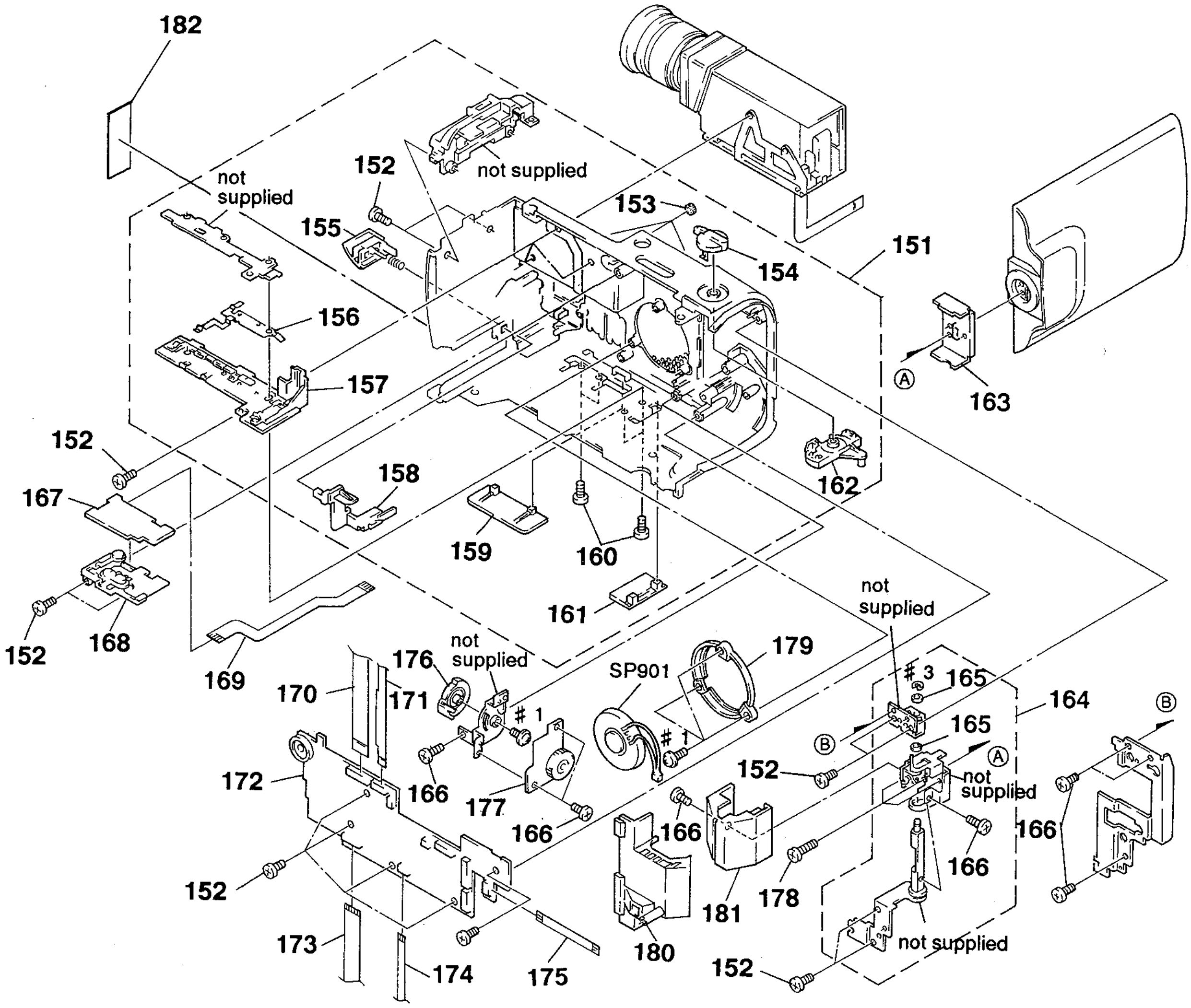
Ref. No.	Part No.	Description	Remark
55	3-578-221-00	SPRING, COMPRESSION	
56	3-942-985-01	KNOB, STAND-BY	
57	3-736-364-01	SPRING	
58	3-942-953-01	HOLDER, STAND-BY KNOB	
59	3-942-895-01	STOPPER, BELT	

5-1-3. CABINET (R) BLOCK ASSEMBLY (TRV30E)


136
101
102
not supplied
103
115
not supplied
104
Ⓐ
116
106
105
107
117
108
114
118
133
132
109
131
112
113
119
120
130
110
111
# 2
125
120
129
102
not supplied
Ⓐ
123
125
121
120
# 1
127
126
112
134
not supplied
128
135
SP901
123
120
124
120

Ref. No.	Part No.	Description	Remark
101	X-3945-003-1	CABINET (R) ASSY (TRV30E:AUS, E, HK)	
101	X-3945-031-1	CABINET (R) ASSY (TRV30E:AEP, UK)	
102	3-948-339-01	SCREW, TAPPING	
103	3-959-978-01	CUSHION, PANEL	
104	X-3945-225-1	KNOB ASSY, POWER (TRV30E)	
105	3-963-540-01	KNOB, BATTERY (TRV30E)	
106	3-963-580-01	SPRING, STAND	
107	3-963-573-01	BASE, STAND (TRV30E)	
108	3-963-571-01	STAND (L)	
109	3-963-541-01	LOCK, BATTERY (TRV30E)	
110	3-426-508-00	SPRING, COMPRESSION (TRV30E)	
111	3-963-579-01	GUIDE, BATTERY LOCK (TRV30E)	
112	3-713-786-21	SCREW (M2X3)	
113	3-963-572-01	STAND (S)	
114	3-963-543-01	HOLDER, POWER KNOB	
115	3-963-533-01	RAIL, GUIDE (TRV30E)	
116	1-656-985-11	FP-331 FLEXIBLE BOARD	
117	A-7072-236-A	PK-40 BOARD, COMPLETE (TRV30E)	
118	3-963-549-01	BLIND, EVF (TRV30E)	
119	X-3945-392-1	BUTTON ASSY, EDIT (TRV30E)	
120	3-948-339-01	SCREW, TAPPING	
121	X-3945-006-1	HINGE ASSY (TRV30E)	
122	3-719-381-31	SCREW (M2X3)(TRV30E)	
123	3-719-381-01	SCREW (M2X4)	
124	3-740-546-61	SCREW (M2X10.5)	
125	3-701-439-21	WASHER	
126	3-963-563-01	COVER, HINGE (TRV30E)	
127	3-959-995-01	CUSHION, SPEAKER	
128	1-769-728-11	CABLE, FLAT (FFC-152)	
129	3-963-547-01	BLIND, HINGE (TRV30E)	
130	3-948-339-11	SCREW, TAPPING (TRV30E)	
131	3-963-536-01	SLEEVE, TILT (TRV30E)	
132	1-656-729-11	FP-320 FLEXIBLE BOARD	
133	1-656-728-11	FP-319 FLEXIBLE BOARD	
134	A-7072-235-A	SD-18 (MO) BOARD, COMPLETE (TRV30E)	
135	1-769-727-11	CABLE, FLAT (FFC-151)	
* 136	3-704-235-01	LABEL, CAUTION (TRV30E:UK)	
SP901	1-504-666-11	SPEAKER (4CM)	

5-1-4. CABINET (R) BLOCK ASSEMBLY (TRV50E/TRV70E)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not supplied
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not supplied
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156
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Ⓐ
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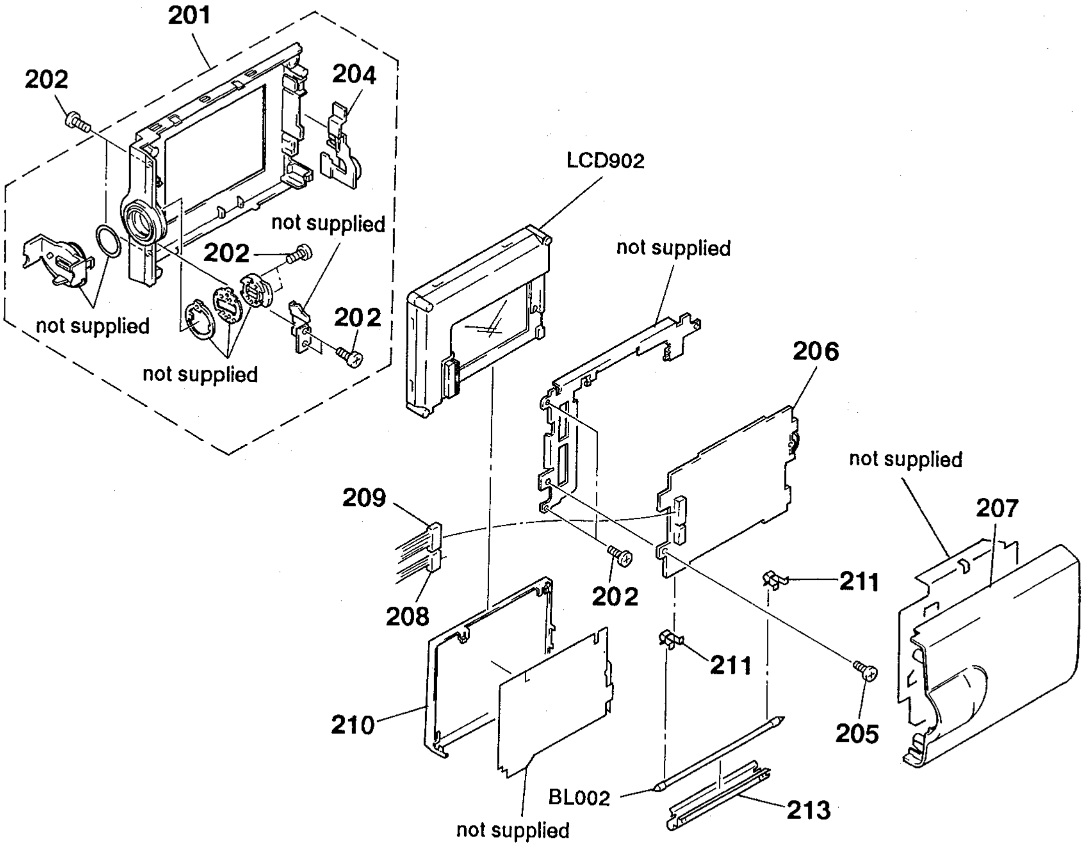
161
not supplied
152
168
169
170
176
not supplied
179
SP901
#3
165
164
Ⓑ
171
#1
#1
165
Ⓑ
Ⓐ
172
166
177
152
not supplied
166
166
166
166
152
181
178
173
180
not supplied
152
174
175

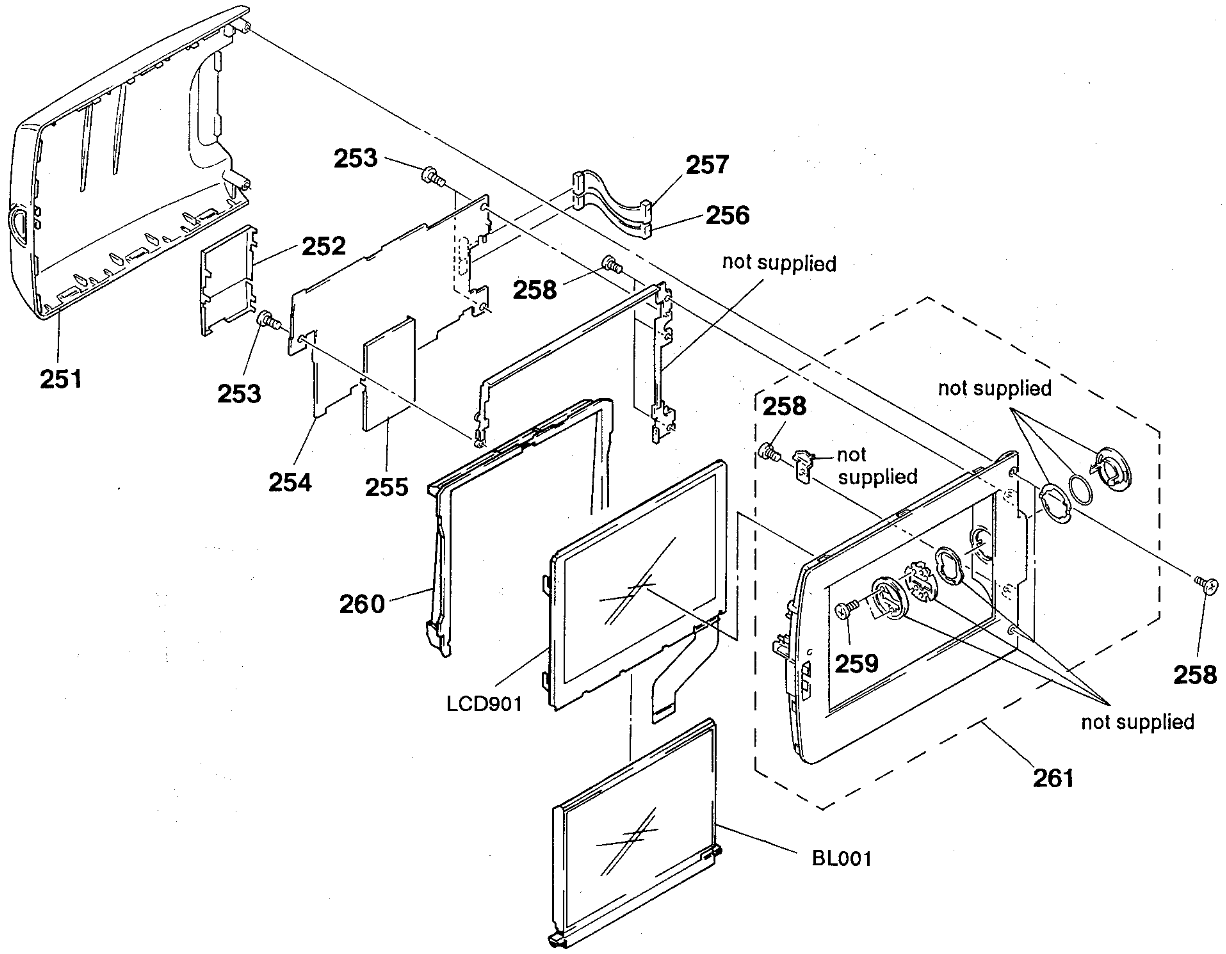
Ref. No.	Part No.	Description	Remark
151	X-3945-091-1	CABINET (R) ASSY(TRV50E/TRV70E:AUS, E, HK)	
151	X-3945-100-1	CABINET (R) ASSY (TRV70E:AEP, UK)	
152	3-948-339-01	SCREW, TAPPING	
153	3-959-978-01	CUSHION, PANEL	
154	X-3945-225-1	KNOB ASSY, POWER	
155	3-964-093-01	KNOB, BATTERY (TRV50E/TRV70E)	
156	3-963-580-01	SPRING, STAND	
157	3-963-573-11	BASE, STAND (TRV50E/TRV70E)	
158	3-964-092-01	LOCK, BATTERY (TRV50E/TRV70E)	
159	3-963-571-01	STAND (L)	
160	3-713-786-21	SCREW (M2X3)	
161	3-963-572-01	STAND (S)	
162	3-963-543-01	HOLDER, POWER KNOB	
163	3-964-061-01	BASE, LC TILT (TRV50E/TRV70E)	
164	X-3945-086-1	HINGE ASSY (TRV50E/TRV70E)	
165	3-701-439-21	WASHER	
166	3-719-381-01	SCREW (M2X4)	
167	A-7072-242-A	PK-41 BOARD, COMPLETE (TRV50E/TRV70E)	
168	X-3945-429-1	BUTTON ASSY, EDIT (TRV50E/TRV70E)	
169	1-656-985-11	FP-331 FLEXIBLE BOARD	
170	1-656-728-11	FP-319 FLEXIBLE BOARD	
171	1-656-729-11	FP-320 FLEXIBLE BOARD	
172	A-7072-241-A	SD-19 (ST) BOARD, COMPLETE (TRV50E/TRV70E)	
173	1-769-728-11	CABLE, FLAT (FFC-152)	
174	1-769-727-11	CABLE, FLAT (FFC-151)	
175	1-769-732-11	CABLE, FLAT (FFC-166)(TRV50E/TRV70E)	
176	3-964-090-01	KNOB, MF (TRV50E/TRV70E)	
177	A-7072-243-A	MF-270 BOARD, COMPLETE (TRV50E/TRV70E)	
178	3-740-546-61	SCREW (M2X10.5)	
179	3-959-995-01	CUSHION, SPEAKER	
180	3-964-063-01	BLIND, HINGE (TRV50E/TRV70E)	
181	3-964-062-11	COVER, HINGE (TRV50E/TRV70E)	
* 182	3-704-235-01	LABEL, CAUTION(TRV70E:UK)	
SP901	1-504-666-11	SPEAKER (4CM)	

5-1-5. LCD SCREEN BLOCK ASSEMBLY (TRV30E)


201
202
204
LCD902
not supplied
202
not supplied
202
not supplied
not supplied
206
not supplied
207
209
202
211
208
211
210
205
BL002
213
not supplied

Ref. No.	Part No.	Description	Remark
201	X-3945-005-1	CABINET (M) ASSY, P (TRV30E)	
202	3-948-339-01	SCREW, TAPPING	
204	3-963-554-01	BUTTON, P LOCK (TRV30E)	
205	3-713-786-21	SCREW (M2X3)	
206	A-7066-443-A	PD-60P BOARD, COMPLETE (TRV30E)	
207	3-963-550-01	CABINET (C), P (TRV30E)	
208	1-954-565-11	HARNESS (SP-145)	
209	1-954-564-11	HARNESS (SP-144)	
210	1-467-479-21	PLATE, LIGHT GUIDE BLOCK (TRV30E)	
* 211	3-960-000-01	TERMINAL, FL	
* 213	3-958-726-02	REFLECTOR (TRV30E)	
BL002	1-517-300-21	TUBE, FLUORESCENT, COLD CATHODE (TRV30E)	
LCD902	1-810-761-21	DISPLAY MODULE, LIQUID CRYSTAL (TRV30E)	

5-1-6. LCD SCREEN BLOCK ASSEMBLY (TRV50E/TRV70E)


253
257
256
252
not supplied
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255
not supplied
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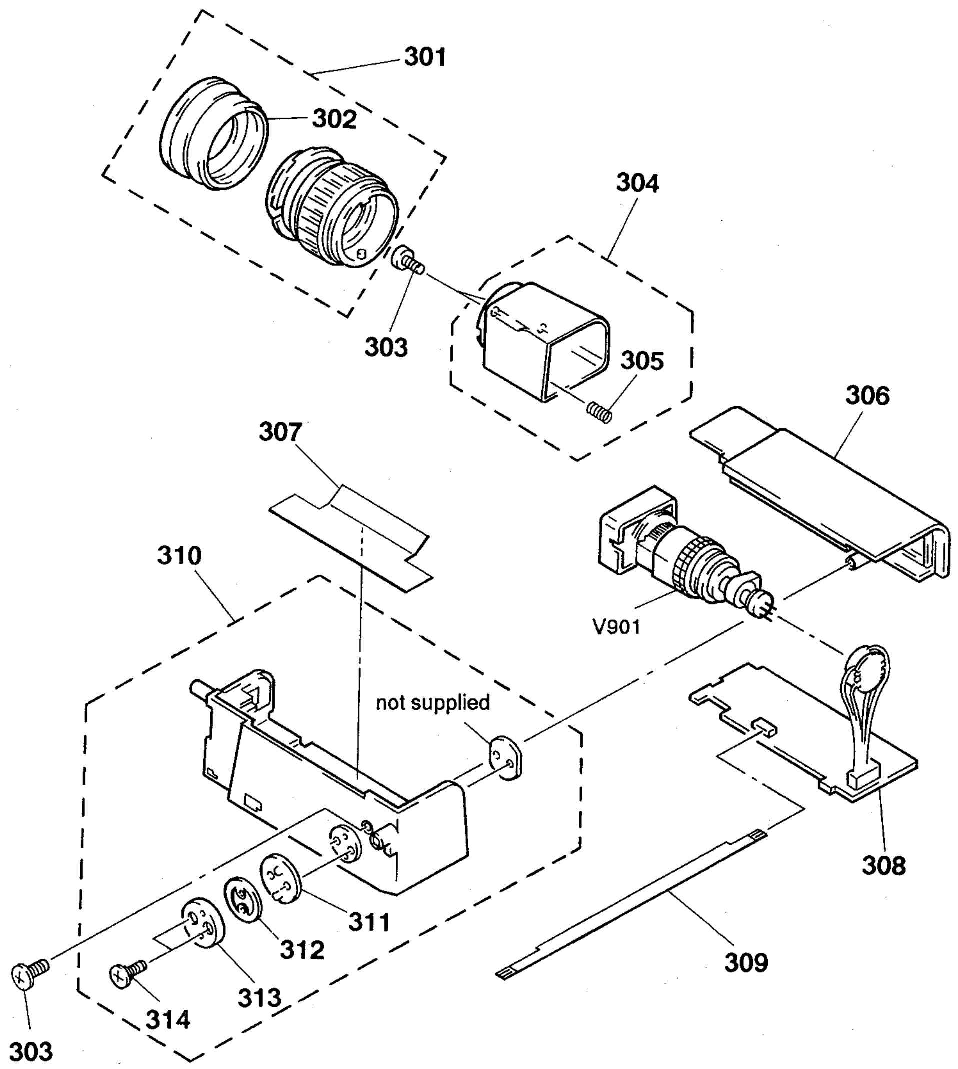
supplied
260
LCD901
259
258
not supplied
261
BL001

Ref. No.	Part No.	Description	Remark
251	X-3945-084-1	CABINET (C) ASSY, PANEL(TRV70E:AUS, E, HK)	
251	X-3945-096-1	CABINET (C) ASSY, PANEL (TRV70E:AEP, UK)	
251	X-3945-099-1	CABINET (C) ASSY, PANEL (TRV50E)	
252	X-3945-087-1	CASE (A) ASSY, SHIELD (TRV50E/TRV70E)	
253	3-713-786-21	SCREW (M2X3)	
254	A-7066-463-A	PD-62P BOARD, COMPLETE (TRV50E/TRV70E)	
255	X-3945-088-1	CASE (B) ASSY, SHIELD (TRV50E/TRV70E)	
256	1-954-565-11	HARNESS (SP-145)	
257	1-954-564-11	HARNESS (SP-144)	
258	3-948-339-01	SCREW, TAPPING	
260	3-964-118-01	ADAPTOR, LCD (TRV50E/TRV70E)	
261	X-3945-085-1	CABINET (M) ASSY, PANEL (TRV50E/TRV70E)	
259	3-719-381-01	SCREW (M2X4)	
BL001	1-517-411-11	TUBE, FLUORESCENT, COLD CATHODE (TRV50E/TRV70E)	
LCD901	1-810-862-21	INDICATOR MODULE, LIQUID CRYST (TRV50E/TRV70E)	

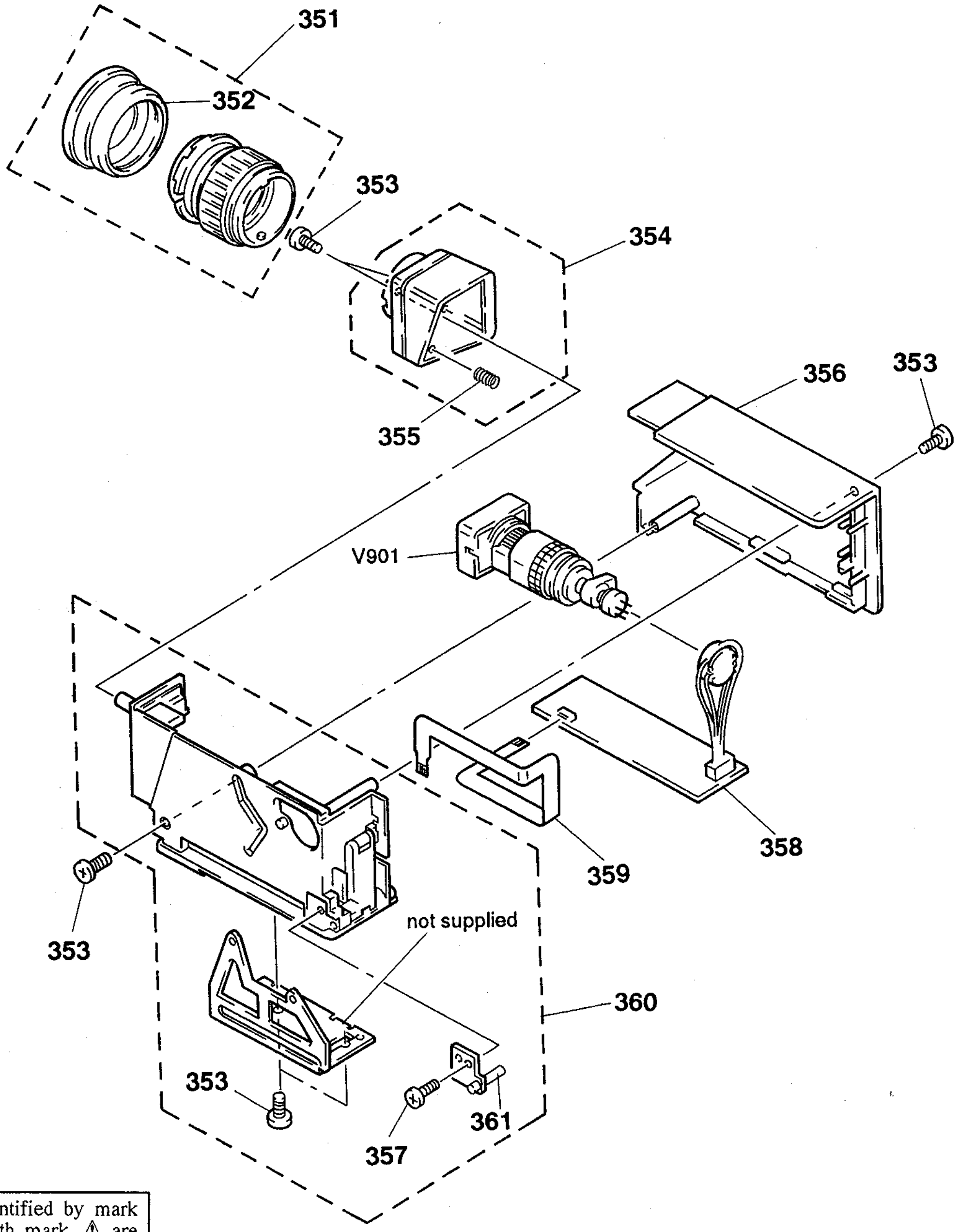
5-1-7. EVF BLOCK ASSEMBLY (TRV30E)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
301	X-3944-966-1	FINDER ASSY	
302	3-963-391-01	EYE CUP	
303	3-948-339-01	SCREW, TAPPING	
304	X-3945-008-1	ORNAMENT ASSY, EVF (TRV30E)	
305	3-302-492-00	SPRING, COMPRESSION	
306	3-963-525-01	CABINET (R), EVF (TRV30E)	
* 307	3-963-582-01	SHEET, INSULATING, EVF (TRV30E)	
308	A-7066-442-A	VF-82P BOARD, COMPLETE (TRV30E)	
309	1-656-508-11	FP-280 FLEXIBLE BOARD (TRV30E)	
310	X-3945-007-1	CABINET (L) ASSY, EVF (TRV30E)	
311	3-963-534-01	PLETE (1), TILT (TRV30E)	
312	3-963-532-01	SPRING, EVF TILT (TRV30E)	
313	3-963-565-01	PLETE (3), TILT (TRV30E)	
314	3-963-566-01	SCREW (M2)(TRV30E)	
⚠V901	1-452-673-11	CRT ASSY (M01KXX90WB)	

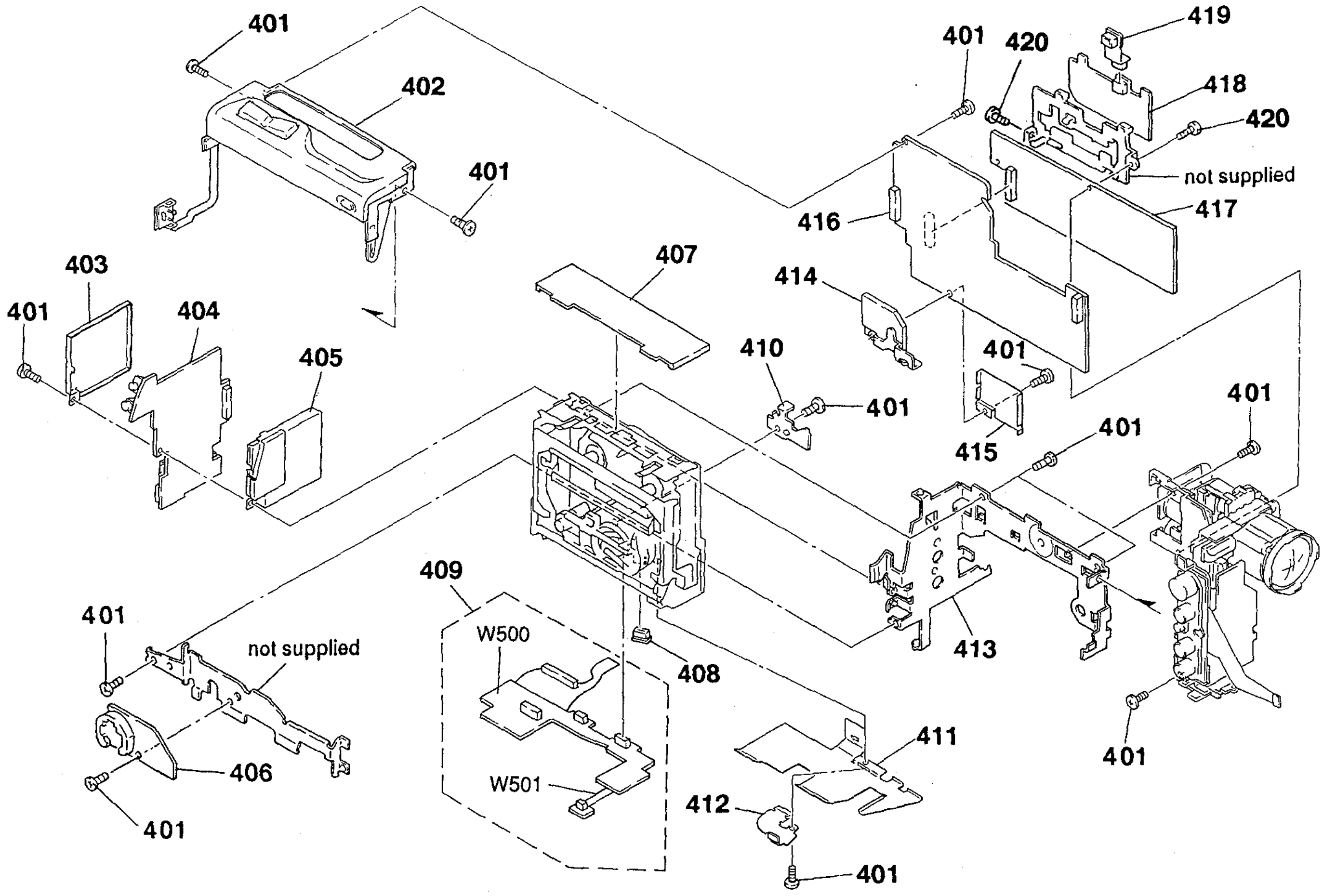
5-1-8. EVF BLOCK ASSEMBLY (TRV50E/TRV70E)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
351	X-3944-966-1	FINDER ASSY	
352	3-963-391-01	EYE CUP	
353	3-948-339-01	SCREW, TAPPING	
354	X-3945-090-1	ORNAMENT ASSY, EVF (TRV50E/TRV70E)	
355	3-302-492-00	SPRING, COMPRESSION	
356	3-964-069-01	CABINET (R), EVF (TRV50E/TRV70E)	
357	3-713-791-51	SCREW (M1.7X3.5), TAPPING, P2 (TRV50E/TRV70E)	
358	A-7066-462-A	VF-85P BOARD, COMPLETE (TRV50E/TRV70E)	
359	1-656-509-11	FP-281 FLEXIBLE BOARD (TRV50E/TRV70E)	
360	X-3945-089-1	CABINET (L) ASSY, EVF (TRV50E/TRV70E)	
361	3-958-643-11	SHAFT (L)(TRV50E/TRV70E)	
⚠V901	1-452-673-11	CRT ASSY (M01KXX90WB)	

5-1-9. MAIN BOARDS ASSEMBLY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402
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414
416
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420
not supplied
417
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401
409
W500
408
W501
401
not supplied
406
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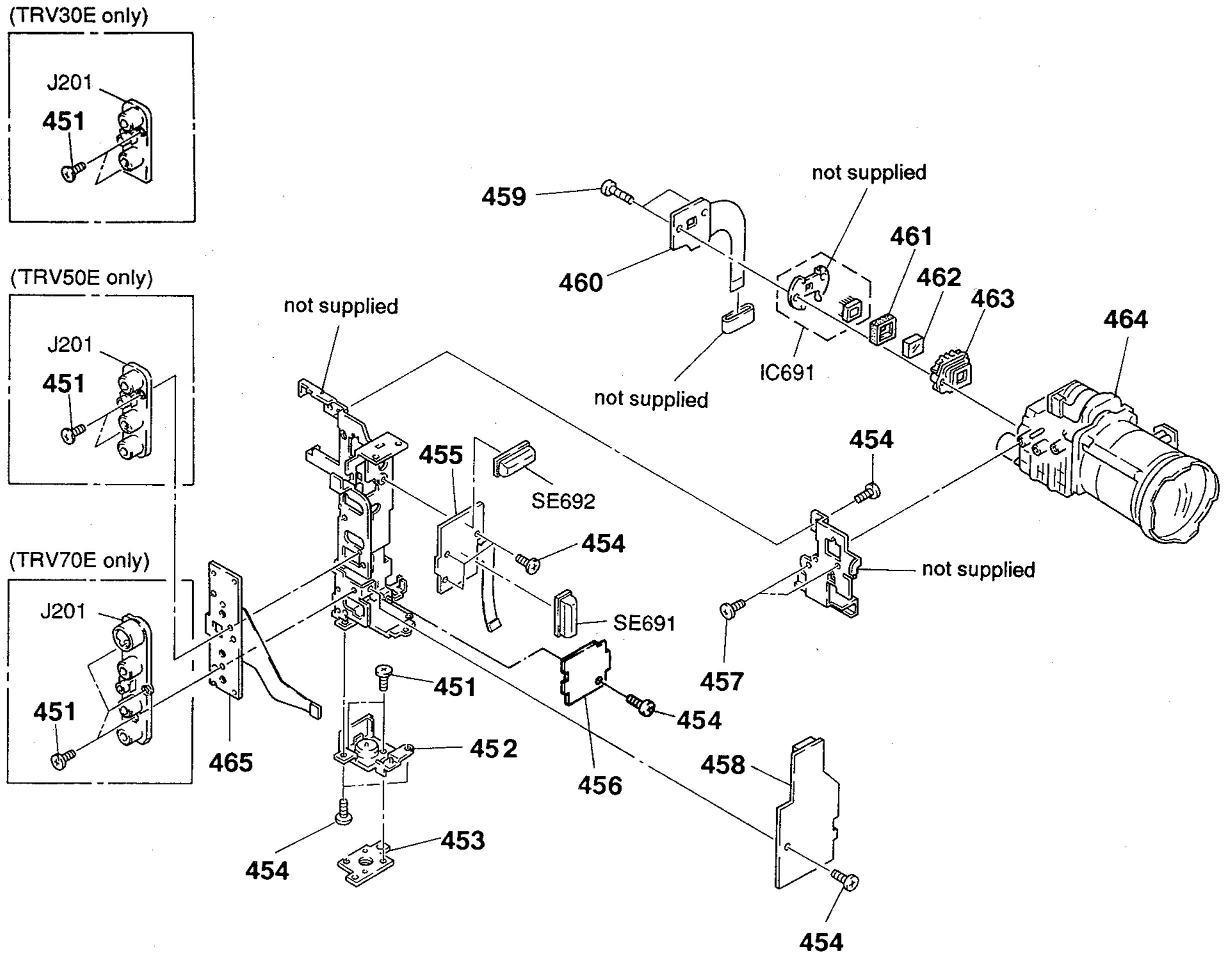
412
413
401
401

Ref. No.	Part No.	Description	Remark
401	3-713-786-21	SCREW (M2X3)	
402	1-473-166-11	SWITCH BLOCK, CONTROL (FK) (TRV30E:AUS, E, HK/TRV50E/TRV70E:AUS, E, HK)	
402	1-473-166-21	SWITCH BLOCK, CONTROL (FK) (TRV30E:AEP, UK/TRV70E:AEP, UK)	
* 403	3-958-925-01	CASE (MAIN), SHIELD, DD	
404	A-7066-439-A	DD-79P (MO) BOARD, COMPLETE (TRV30E)	
404	A-7066-458-A	DD-79P (ST) BOARD, COMPLETE (TRV50E/TRV70E)	
* 405	3-958-926-01	CASE (LID), SHIELD, DD	
406	A-7072-232-A	ZB-2 (NO BZ) BOARD, COMPLETE	
407	3-958-341-01	COVER, LS	
408	1-691-471-11	CONNECTOR, TRANSLATION 11P	
409	A-7072-283-A	SL-38 (FD) BOARD, COMPLETE	
* 410	3-958-667-01	FRAME (B)	
* 411	3-958-928-01	PLATE, SHIELD, RP	
412	1-651-891-11	FP-52 FLEXIBLE BOARD (TRV30E/TRV50E)	
412	1-651-892-11	FP-53 FLEXIBLE BOARD (TRV70E)	
* 413	3-958-345-01	FRAME (U)	
* 414	X-3943-976-1	SHIELD (MAIN) ASSY, RP	
* 415	3-958-924-01	CASE (LID)), SHIELD, RP	
416	A-7066-438-A	VS-126P (L) BOARD, COMPLETE (TRV30E:AUS, E, HK)	
416	A-7066-457-A	VS-126P (H) BOARD, COMPLETE (TRV70E:AUS, E, HK)	
416	A-7066-497-A	VS-126P (M) BOARD, COMPLETE (TRV50E)	
416	A-7066-527-A	VS-126P (L) BOARD, COMPLETE (TRV30E:AEP, UK)	
416	A-7085-023-A	VS-126P (H) BOARD, COMPLETE (TRV70E:AEP, UK)	
417	A-7066-440-A	VC-163P (L) BOARD, COMPLETE (TRV30E)	
417	A-7066-459-A	VC-163P (H) BOARD, COMPLETE (TRV50E/TRV70E)	
418	A-7066-461-A	HE-20P BOARD, COMPLETE (TRV70E)	
419	1-656-507-11	FP-279 FLEXIBLE BOARD (TRV70E)	
420	3-719-381-01	SCREW (M2X4)	
W500	1-651-889-11	FP-48 (SL) FLEXIBLE BOARD	
W501	1-642-186-11	FP-437 FLEXIBLE BOARD	

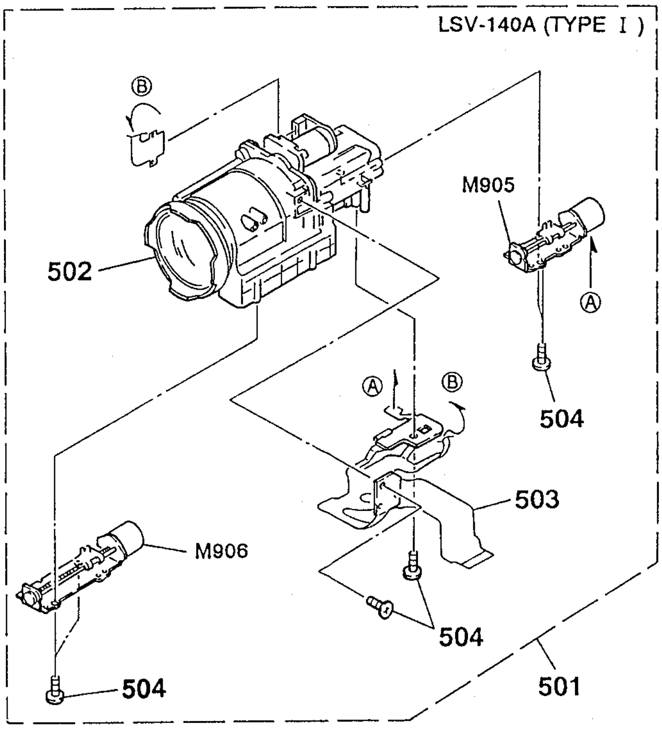
5-1-10. CCD BLOCK ASSEMBLY


(TRV30E only)
J201
451
(TRV50E only)
J201
451
(TRV70E only)
J201
451
465
not supplied
455
SE692
454
SE691
451
452
453
454
456
454
458
454
459
460
not supplied
461
462
463
464
not supplied
IC691
454
not supplied
457

Be sure to read "Note on the CCD Imager replacement" on page 4–6 when changing the CCD imager.

Ref. No.	Part No.	Description	Remark
451	3-719-381-01	SCREW (M2X4)	
452	3-958-310-11	HOLDER, TRIPOD	
453	3-958-286-01	SHEET METAL, TRIPOD	
454	3-713-786-21	SCREW (M2X3)	
455	1-651-890-11	FP-49 FLEXIBLE BOARD (TRV50E/TRV70E)	
456	A-7066-441-A	PJ-70P BOARD, COMPLETE (TRV30E)	
456	A-7066-460-A	PJ-70P BOARD, COMPLETE (TRV50E/TRV70E)	
457	3-948-339-01	SCREW, TAPPING	
458	A-7066-437-A	AU-185P (MO) BOARD, COMPLETE (TRV30E)	
458	A-7066-456-A	AU-185P (ST) BOARD, COMPLETE (TRV50E/TRV70E)	
459	3-947-268-01	2, +B TAPPING P TAIT	
460	A-7072-134-A	CD-137 A BOARD, COMPLETE (TRV50E/TRV70E)	
460	A-7072-135-A	CD-137 B BOARD, COMPLETE (TRV30E)	
461	3-946-857-01	RUBBER (S), SEAL (TRV30E)	
461	3-960-149-01	RUBBER (3), SEAL (TRV50E/TRV70E)	
462	1-547-558-21	FILTER BLOCK, OPTICAL (TRV30E)	
462	1-547-735-51	FILTER BLOCK, OPTICAL (TRV50E/TRV70E)	
463	3-946-856-01	ADAPTOR (H), CCD FITTING	
464	1-547-716-11	LENS, ZOOM (VCL-5412WA)	
464	8-848-704-01	DEVICE, LENS LSV-140A	
465	1-657-049-11	FP-44 FLEXIBLE BOARD	
IC691	A-7030-369-A	CCD BLOCK ASSY (AUTO)(TRV30E)	
IC691	A-7030-495-A	CCD BLOCK ASSY (AUTO)(TRV50E/TRV70E)	
J201	1-537-373-71	JACK BOARD ASSY (TRV70E)	
J201	1-537-726-11	TERMINAL BOARD (TRV30E)	
J201	1-537-747-11	TERMINAL BOARD (TRV50E)	
SE691	1-810-725-31	SENSOR, ANGULAR VELOCITY (TRV50E/TRV70E)	
SE692	1-810-725-41	SENSOR, ANGULAR VELOCITY (TRV50E/TRV70E)	

5-1-11. ZOOM LENS ASSEMBLIES (LSV-140A) (VCL-5412WA)


LSV-140A (TYPE Ⅰ)
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M905
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Ⓐ
504
Ⓐ
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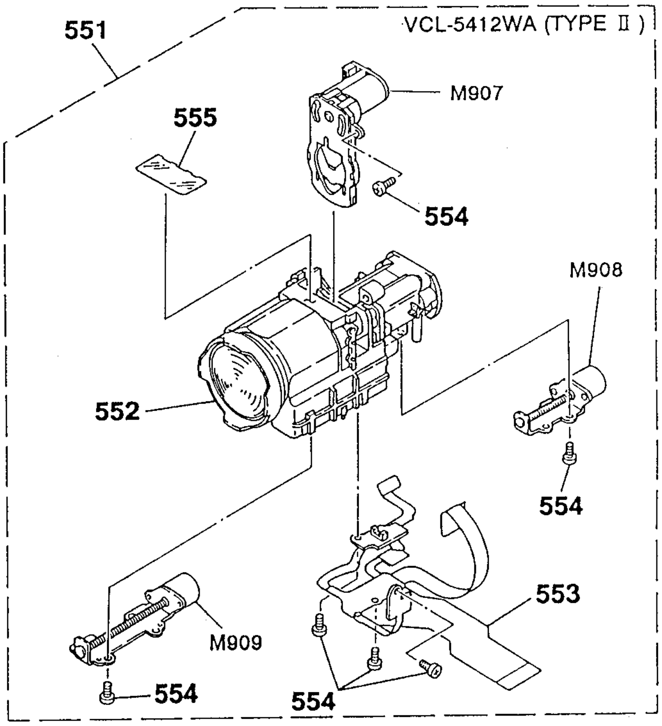
504
503
M906
504
504
501


551
VCL-5412WA (TYPE Ⅱ)
M907
555
554
M908
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M909
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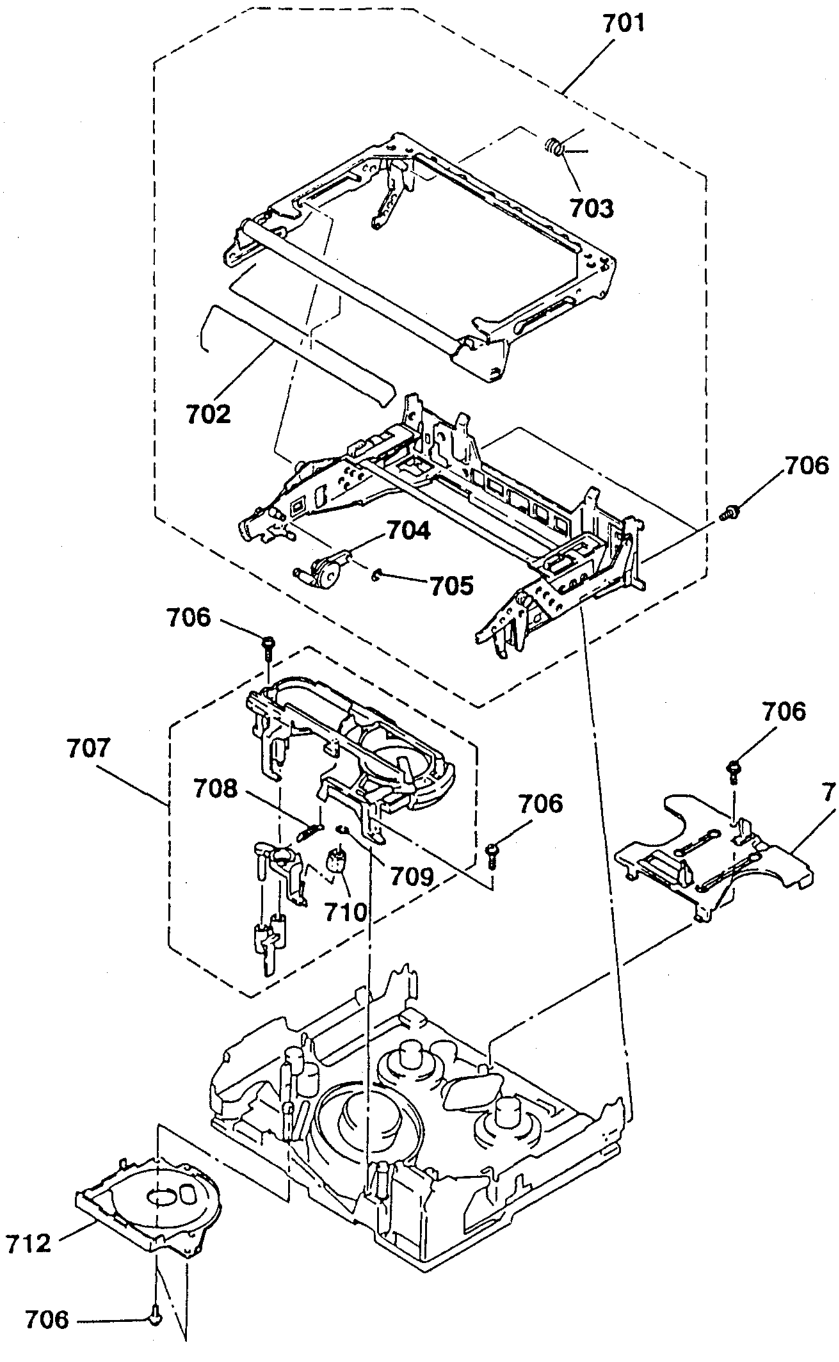
554

Ref. No.	Part No.	Description	Remark
501	8-848-704-01	DEVICE, LENS LSV-140A (TYPE I)	
502	A-4910-598-A	DEVICE ASSY, LSV-140A (RP)	
503	A-4915-338-A	FLEXIBLE MOUNT	
504	3-713-791-41	SCREW (M1.7X5), TAPPING, P2	
M905	1-698-364-01	MOTOR ASSY, FOCUS	
M906	1-698-363-01	MOTOR ASSY, ZOOM	
551	1-547-716-11	LENS, ZOOM (VCL-5412WA)(TYPE II)	
552	3-708-891-01	TUBE, MIRROR ASSY	
553	3-708-890-01	FLEXIBLE, MAIN	
554	3-708-302-01	SCREW (BT3 P1.7X4C)	
555	3-708-886-01	COVER, IG	
M907	3-708-888-01	METER, IG (IRIS)	
M908	3-708-889-01	MOTOR ASSY, FOCUS	
M909	3-708-887-01	MOTOR ASSY, ZOOM	

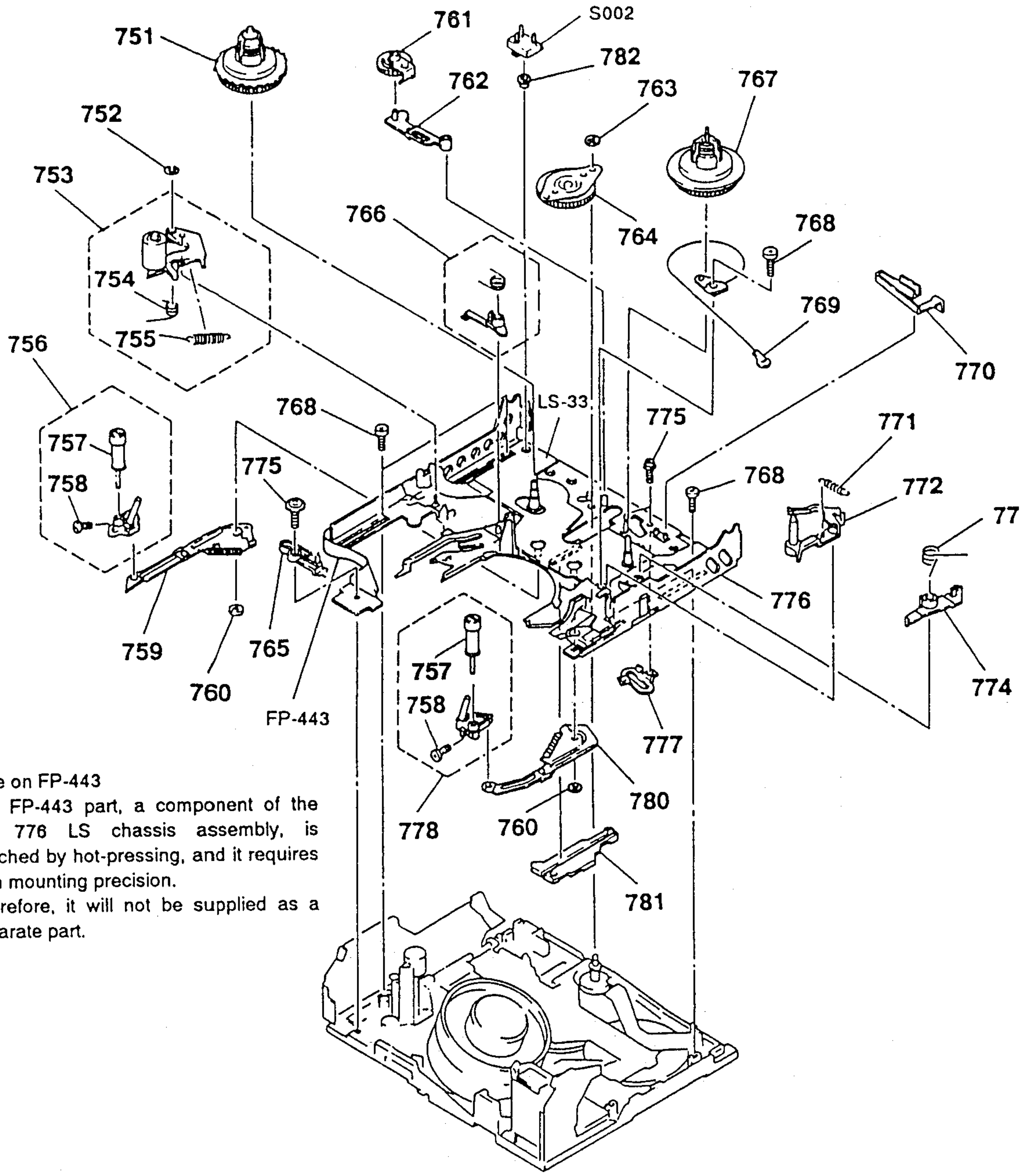
5-1-12. CASSETTE COMPARTMENT ASSEMBLY



Ref. No.	Part No.	Description	Remark
701	A-7040-312-K	CASSETTE COMPARTMENT BLOCK ASSY	
702	3-945-773-01	BAR, TORSION	
703	3-945-771-01	SPRING, TORSION	
704	X-3941-287-2	DAMPER ASSY	
705	3-315-384-31	WASHER, STOPPER	
706	3-947-503-01	SCREW (M1.4X2.5)	

Ref. No.	Part No.	Description	Remark
707	A-7040-309-A	PROTECT (BASE) BLOCK ASSY	
708	3-945-760-01	SPRING, TENSION	
709	3-321-393-01	WASHER, STOPPER	
710	X-3944-886-1	ROLLER ASSY, HC	
711	X-3941-280-1	RETAINER ASSY, GOOSENECK	
712	3-945-733-01	COVER, CAPSTAN	

5-1-13. LS CHASSIS ASSEMBLY


751
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S002
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LS-33
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FP-443
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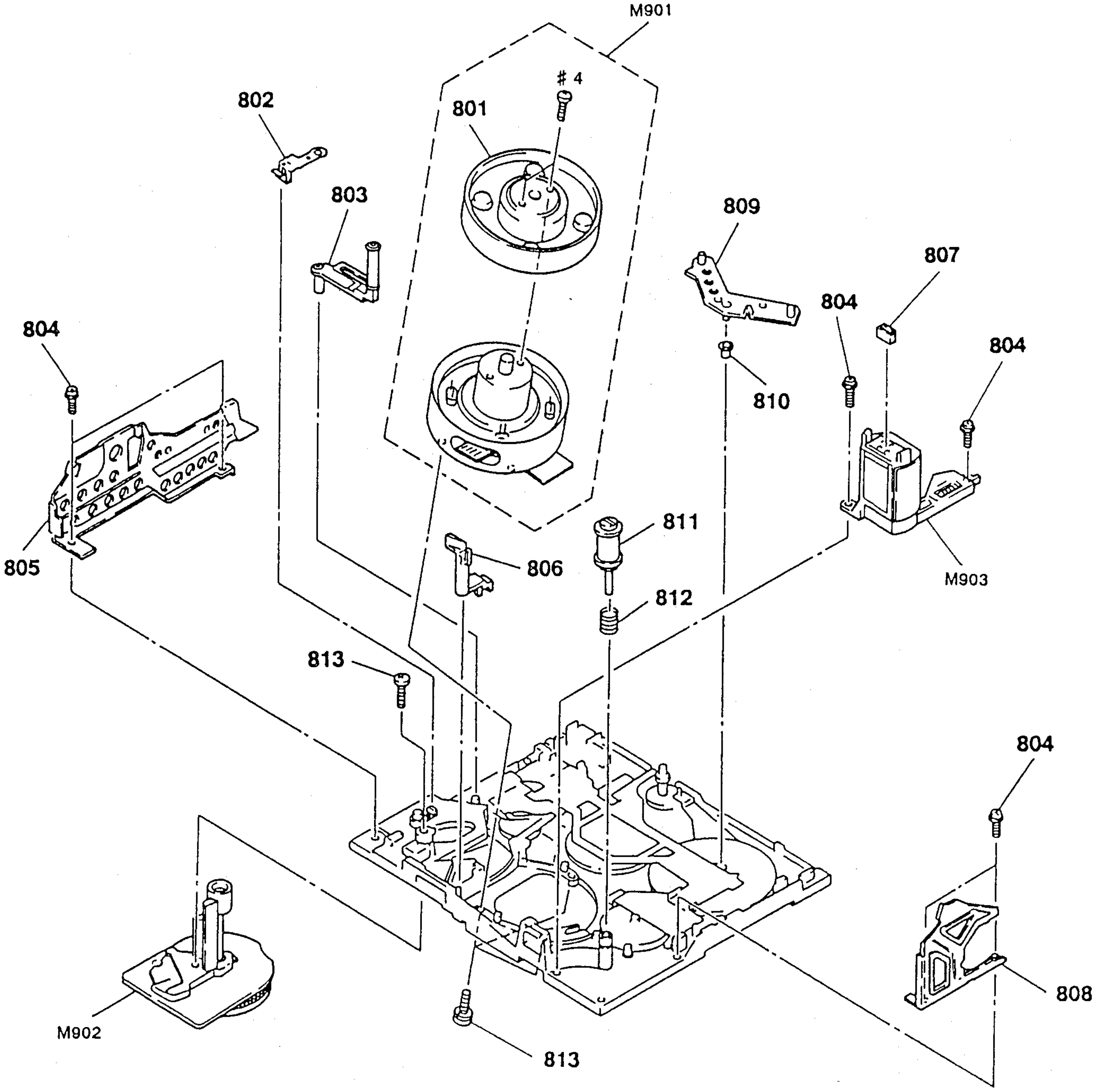
Note on FP-443
The FP-443 part, a component of the No. 776 LS chassis assembly, is attached by hot-pressing, and it requires high mounting precision.
Therefore, it will not be supplied as a separate part.

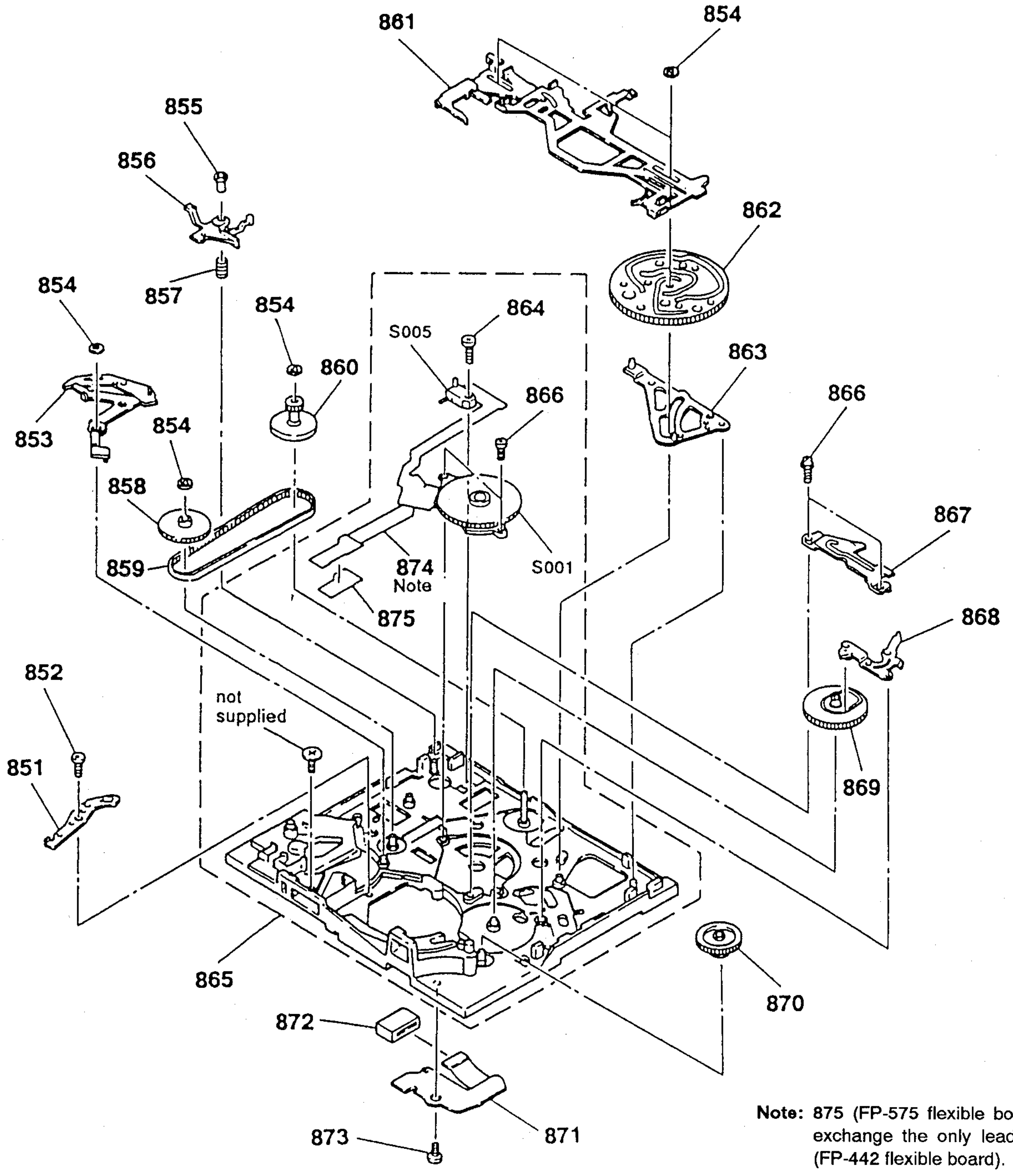
Ref. No.	Part No.	Description	Remark
751	X-3941-274-1	TABLE ASSY, REEL, T	
752	3-331-007-21	WASHER	
753	X-3941-271-5	ARM ASSY, PINCH	
754	3-945-743-01	SPRING, TORSION	
755	3-945-783-01	SPRING, TENSION	
756	A-7040-307-A	GUIDE (BASE)(T) BLOCK ASSY	
757	X-3941-424-1	ROLLER ASSY, TG6	
758	3-947-504-01	SCREW (M1.2X2)	
759	X-3941-267-1	ARM (T) ASSY, GUIDE	
760	3-669-465-01	WASHER (1.5), STOPPER	
761	X-3941-273-1	SOFT ASSY, T	
762	3-945-753-01	ARM, T SOFT	
763	3-726-829-01	WASHER, STOPPER	
764	X-3941-279-5	GEAR ASSY, GOOSENECK	
765	3-947-644-01	RETAINER, TG5 (BASE)	
766	A-7040-321-A	CLAW BLOCK ASSY, T HARD	
767	X-3944-116-1	TABLE ASSY, S REEL	
768	3-945-756-01	SCREW (M1.4X3)	
769	X-3941-277-1	STRING BLOCK ASSY	
770	3-945-801-01	BRAKE, S SOFT	
771	3-954-327-01	SPRING, TENSION	
772	X-3941-276-1	TG1 ASSY	
773	3-945-752-01	SPRING, TORSION	
774	3-945-799-01	BRAKE, S HARD	
775	3-947-503-01	SCREW (M1.4X2.5)	
776	X-3943-307-1	CHASSIS ASSY, LS	
777	3-945-784-01	PLATE, CAM, LS	
778	A-7040-323-A	GUIDE (BASE)(S) BLOCK ASSY	
780	X-3941-266-1	ARM (S) ASSY, GUIDE	
781	3-945-837-01	SLIDER, GL	
782	3-949-881-01	SLEEVE	
S002	1-572-987-11	SWITCH, PUSH (3 KEY) (REC PROOF, ME/MP, MP/MP-HG)	

5-1-14. MECHANISM CHASSIS ASSEMBLY (1)



Ref. No.	Part No.	Description	Remark
801	A-7049-521-A	DRUM ASSY, UPPER (DGR-90-R) (TRV30E/TRV50E)	
801	A-7049-607-A	DRUM ASSY, UPPER (DGR-90-R)(TRV70E)	
802	3-945-822-01	SPRING, LEAF, TG7 ARM	
803	A-7040-305-A	ARM BLOCK ASSY, TG7	
804	3-947-503-01	SCREW (M1.4X2.5)	
805	X-3941-255-1	PLATE (T) ASSY, SIDE	
806	3-945-735-01	ARM, HC CONVERSION	
807	1-568-323-11	CONNECTOR, BOARD TO BOARD 4P	
808	3-945-691-01	PLATE (S), SIDE	
809	3-945-701-01	ARM, LS	
810	3-945-702-01	ROLLER, LS	
811	X-3941-262-1	ROLLER ASSY, TG2	
812	3-956-651-01	SPRING, COMPRESSION	
813	3-686-493-01	SCREW (M2X5), P1	
M901	A-7048-585-A	DRUM ASSY (DGH-90A-R)(TRV30E/TRV50E)	
M901	A-7048-808-A	DRUM ASSY (DGH-0C3A-R)(TRV70E)	
M902	8-835-477-12	MOTOR, DC SCE-0101A (CAPSTAN)	
M903	A-7040-304-A	MOTOR BLOCK ASSY, LM (LOADING)	

5-1-15. MECHANISM CHASSIS ASSEMBLY (2)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S005
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Note
S001
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not supplied
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Note: 875 (FP-575 flexible board) is part that exchange the only leading part of 874 (FP-442 flexible board).

Ref. No.	Part No.	Description	Remark
851	3-945-734-01	ARM, HC DRIVING	
852	3-728-103-11	SCREW (M1.4X1.6), SPECIAL HEAD	
853	X-3941-259-1	ARM ASSY, PINCH PRESS	
854	3-726-829-01	WASHER, STOPPER	
855	3-945-730-01	SLEEVE, EJECT	
856	3-945-706-01	LEVER, EJECT	
857	3-945-729-01	SPRING, COMPRESSION	
858	X-3941-256-1	GEAR ASSY, CHANGE	
859	3-944-539-01	BELT, RELAY	
860	3-945-695-01	PULLEY, RELAY	
861	X-3941-260-1	SLIDER ASSY, M	
862	3-945-696-02	CAM	
863	X-3941-258-3	ARM ASSY, GL	
864	3-713-786-71	SCREW (M2X5)	

Ref. No.	Part No.	Description	Remark
865	A-7040-303-A	CHASSIS ASSY, MECHANICAL	
866	3-947-503-01	SCREW (M1.4X2.5)	
867	3-945-722-01	RETAINER, GEAR	
868	X-3941-257-1	ARM ASSY, FF	
869	3-945-697-01	GEAR (B), L	
870	3-945-700-01	GEAR (A), L	
871	1-641-643-12	FP-444 FLEXIBLE BOARD	
872	1-691-254-13	CONNECTOR, TRANSLATION 10P	
873	3-945-756-01	SCREW (M1.4X3)	
874	1-641-639-13	FP-442 FLEXIBLE BOARD	
875	1-645-271-11	FP-575 FLEXIBLE BOARD	
S001	1-572-986-11	SWITCH, ROTARY (ENCODER)	
S005	1-570-771-21	SWITCH (C DOWN)	

5-2. ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA..., uPB...: μPB..., uPC...: μPC..., uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH
- Australian model is abbreviated as AUS.
  Hong Kong model is abbreviated as HK.

Ref. No.	Part No.	Description	Remark
*	A-7066-437-A	AU-185P (MO) BOARD, COMPLETE (TRV30E)	
		*************************************	
*	A-7066-456-A	AU-185P (ST) BOARD, COMPLETE	(TRV50E/TRV70E)
		***************************	
		< CAPACITOR >	
C1301	1-124-779-00	ELECT CHIP 10uF 20% 16V	(TRV50E/TRV70E)
C1302	1-124-779-00	ELECT CHIP 10uF 20% 16V	
C1305	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C1308	1-126-607-11	ELECT CHIP 47uF 20% 4V	
C1309	1-126-607-11	ELECT CHIP 47uF 20% 4V	(TRV50E/TRV70E)
C1313	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1314	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1315	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C1316	1-126-205-11	ELECT CHIP 47uF 20% 6.3V	
C1317	1-126-607-11	ELECT CHIP 47uF 20% 4V	
C1318	1-126-207-11	ELECT CHIP 33uF 20% 4V	
C1319	1-126-205-11	ELECT CHIP 47uF 20% 6.3V	
C1320	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C1321	1-126-209-11	ELECT 100uF 20% 4V	
C1322	1-124-778-00	ELECT CHIP 22uF 20% 6.3V	(TRV30E)
C1322	1-124-779-00	ELECT CHIP 10uF 20% 16V	(TRV50E/TRV70E)
C1323	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	(TRV50E/TRV70E)
C1324	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	
C1326	1-165-320-11	CERAMIC CHIP 0.47uF 10% 16V	(TRV50E/TRV70E)
C1328	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	(TRV50E/TRV70E)
C1329	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	(TRV50E/TRV70E)
C1330	1-126-607-11	ELECT CHIP 47uF 20% 4V	(TRV50E/TRV70E)
C1331	1-165-320-11	CERAMIC CHIP 0.47uF 10% 16V	
C1332	1-126-601-11	ELECT CHIP 2.2uF 20% 50V	(TRV50E/TRV70E)
C1333	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1334	1-126-607-11	ELECT CHIP 47uF 20% 4V	
C1335	1-165-320-11	CERAMIC CHIP 0.47uF 10% 16V	(TRV50E/TRV70E)
C1336	1-126-601-11	ELECT CHIP 2.2uF 20% 50V	
C1337	1-126-601-11	ELECT CHIP 2.2uF 20% 50V	(TRV50E/TRV70E)
C1338	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1339	1-165-320-11	CERAMIC CHIP 0.47uF 10% 16V	
C1340	1-126-601-11	ELECT CHIP 2.2uF 20% 50V	
C1341	1-126-602-11	ELECT CHIP 3.3uF 20% 50V	
C1342	1-124-778-00	ELECT CHIP 22uF 20% 6.3V	
C1343	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C1344	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1345	1-126-602-11	ELECT CHIP 3.3uF 20% 50V	(TRV50E/TRV70E)
C1346	1-163-209-00	CERAMIC CHIP 0.0015uF 10% 50V	(TRV50E/TRV70E)
C1347	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	(TRV30E)
C1348	1-124-779-00	ELECT CHIP 10uF 20% 16V	
C1350	1-162-965-11	CERAMIC CHIP 0.0015uF 10% 50V	
C1351	1-124-778-00	ELECT CHIP 22uF 20% 6.3V	(TRV50E/TRV70E)
C1352	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1358	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C1373	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	(TRV30E)
C1379	1-126-607-11	ELECT CHIP 47uF 20% 4V	(TRV50E/TRV70E)
		< CONNECTOR >	
CN1301	1-691-490-21	CONNECTOR, FFC/FPC 11P	
* CN1302	1-691-933-11	CONNECTOR, BOARD TO BOARD 34P	
		< DIODE >	
D1303	8-719-404-49	DIODE MA111	
D1306	8-719-052-33	DIODE MAZV082DFL	(TRV50E/TRV70E)
D1307	8-719-052-33	DIODE MAZV082DFL	
		< IC >	
IC130	8-759-338-93	IC AN3996FHP-EB	(TRV30E)
IC130	8-759-330-00	IC AN3988NFHP-EB	(TRV50E/TRV70E)
		< COIL >	
L1302	1-216-295-91	CONDUCTOR, CHIP (2012)	(TRV30E)

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q1301	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV50E/TRV70E)
Q1302	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q1303	8-729-402-42	TRANSISTOR UN5213	
Q1304	8-729-403-35	TRANSISTOR UN5113	
Q1305	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV50E/TRV70E)
Q1306	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q1307	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV50E/TRV70E)
Q1308	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q1309	8-729-420-53	TRANSISTOR UN5115	
Q1313	8-729-420-53	TRANSISTOR UN5115	
Q1314	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV50E/TRV70E)
		< RESISTOR >	
R1301	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1302	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1303	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV70E)
R1304	1-216-817-11	METAL CHIP 470 5% 1/16W	(TRV50E/TRV70E)
R1306	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV30E)
R1307	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV70E)
R1308	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1309	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	(TRV50E/TRV70E)
R1310	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R1313	1-216-810-11	METAL CHIP 120 5% 1/16W	(TRV50E/TRV70E)
R1314	1-216-803-11	METAL CHIP 33 5% 1/16W	(TRV30E)
R1314	1-216-810-11	METAL CHIP 120 5% 1/16W	(TRV50E/TRV70E)
R1315	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1316	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R1317	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R1318	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	(TRV50E/TRV70E)
R1318	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV30E)
R1319	1-216-853-11	METAL CHIP 470K 5% 1/16W	(TRV50E/TRV70E)
R1319	1-216-857-11	METAL CHIP 1M 5% 1/16W	(TRV30E)
R1320	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	(TRV50E/TRV70E)
R1321	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV50E/TRV70E)
R1322	1-216-824-11	METAL CHIP 1.8K 5% 1/16W	(TRV50E/TRV70E)
R1323	1-216-813-11	METAL CHIP 220 5% 1/16W	(TRV50E/TRV70E)
R1323	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	(TRV30E)
R1324	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	

Ref. No.	Part No.	Description	Remark
R1325	1-216-845-11	METAL CHIP 100K 5% 1/16W	(TRV30E)
R1325	1-216-851-11	METAL CHIP 330K 5% 1/16W	(TRV50E/TRV70E)
R1326	1-216-851-11	METAL CHIP 330K 5% 1/16W	(TRV50E/TRV70E)
R1328	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	(TRV50E/TRV70E)
R1329	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R1331	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1332	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1333	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1334	1-218-720-11	METAL CHIP 15K 0.50% 1/16W	(TRV50E/TRV70E)
R1334	1-218-881-11	METAL CHIP 27K 0.50% 1/16W	(TRV30E)
R1336	1-218-748-11	METAL CHIP 220K 0.50% 1/16W	(TRV50E/TRV70E)
R1336	1-218-901-11	METAL CHIP 180K 0.50% 1/16W	(TRV30E)
R1341	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1344	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1346	1-216-838-11	METAL CHIP 27K 5% 1/16W	(TRV50E/TRV70E)
R1347	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV50E/TRV70E)
R1348	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R1349	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1350	1-216-817-11	METAL CHIP 470 5% 1/16W	(TRV50E/TRV70E)
R1351	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R1352	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1355	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1358	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV50E/TRV70E)
R1361	1-216-295-91	CONDUCTOR, CHIP (2012)	(TRV50E/TRV70E)

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* A-7072-134-A CD-137 A BOARD, COMPLETE (TRV50E/TRV70E)

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* A-7072-135-A CD-137 B BOARD, COMPLETE (TRV30E)

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(Ref. No. 2,000 Series)

Ref. No.	Part No.	Description	Remark
		< CAPACITOR >	
C691	1-135-214-21	TANTAL. CHIP 4.7uF 20% 20V	
C692	1-135-210-11	TANTALUM CHIP 4.7uF 20% 10V	
C693	1-163-227-11	CERAMIC CHIP 10PF 0.5PF 50V	(TRV30E)
C694	1-164-346-11	CERAMIC CHIP 1uF 16V	
C695	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C696	1-104-908-11	TANTAL. CHIP 47uF 20% 4V	

CD-137 DD-79

Ref. No.	Part No.	Description	Remark
		< IC >	
IC691	A-7030-369-A	CCD BLOCK ASSY (AUTO)(TRV30E)	
IC691	A-7030-495-A	CCD BLOCK ASSY (AUTO)(TRV50E/TRV70E)	
		< COIL >	
L691	1-412-963-11	INDUCTOR 100uH	
		< TRANSISTOR >	
Q691	8-729-232-86	TRANSISTOR 2SK1875-BL/V	
Q692	8-729-117-73	TRANSISTOR 2SC4178-F14	
		< RESISTOR >	
R692	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R693	1-216-839-11	METAL CHIP 33K 5% 1/16W	(TRV30E)
R693	1-216-840-11	METAL CHIP 39K 5% 1/16W	(TRV50E/TRV70E)
R694	1-216-045-00	METAL CHIP 680 5% 1/10W	(TRV30E)
R694	1-216-047-00	METAL CHIP 820 5% 1/10W	(TRV50E/TRV70E)
R695	1-216-845-11	METAL CHIP 100K 5% 1/16W	(TRV50E/TRV70E)
R695	1-216-849-11	METAL CHIP 220K 5% 1/16W	(TRV30E)
R696	1-216-809-11	METAL CHIP 100 5% 1/16W	
R697	1-216-073-00	METAL CHIP 10K 5% 1/10W	
		< FLEXIBLE BOARD >	
W691	1-654-849-11	FP-275 FLEXIBLE BOARD	
W692	1-654-849-11	FP-275 FLEXIBLE BOARD	

`***************************************************************`

* A-7066-439-A DD-79P (MO) BOARD, COMPLETE (TRV30E)

`***********************************`

* A-7066-458-A DD-79P (ST) BOARD, COMPLETE (TRV50E/TRV70E)

`***************************`

Ref. No.	Part No.	Description	Remark
		< CAPACITOR >	
C901	1-164-492-11	CERAMIC CHIP 0.15uF 10%	16V
C902	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C903	1-163-121-00	CERAMIC CHIP 150PF 5%	50V
C904	1-163-121-00	CERAMIC CHIP 150PF 5%	50V
C906	1-164-245-11	CERAMIC CHIP 0.015uF 10%	25V
C907	1-162-963-11	CERAMIC CHIP 680PF 10%	50V
C908	1-162-963-11	CERAMIC CHIP 680PF 10%	50V
C909	1-162-963-11	CERAMIC CHIP 680PF 10%	50V
C910	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C911	1-162-963-11	CERAMIC CHIP 680PF 10%	50V
C912	1-128-530-11	ELECT CHIP 33uF 20%	10V
C913	1-128-004-11	ELECT CHIP 10uF 20%	16V
C914	1-128-004-11	ELECT CHIP 10uF 20%	16V
C915	1-165-178-11	CERAMIC CHIP 6.8uF	16V
C916	1-128-004-11	ELECT CHIP 10uF 20%	16V
C917	1-165-178-11	CERAMIC CHIP 6.8uF	16V
C918	1-165-178-11	CERAMIC CHIP 6.8uF	16V
C920	1-165-178-11	CERAMIC CHIP 6.8uF	16V
C921	1-165-178-11	CERAMIC CHIP 6.8uF	16V
C923	1-165-178-11	CERAMIC CHIP 6.8uF	16V
C924	1-165-178-11	CERAMIC CHIP 6.8uF	16V
C925	1-164-506-11	CERAMIC CHIP 4.7uF	16V
C926	1-164-337-11	CERAMIC CHIP 2.2uF	16V
C927	1-165-178-11	CERAMIC CHIP 6.8uF	16V
C928	1-165-178-11	CERAMIC CHIP 6.8uF	16V
C929	1-135-216-11	TANTALUM CHIP 10uF 20%	10V
C930	1-107-418-11	ELECT CHIP 10uF 20%	35V
C931	1-128-004-11	ELECT CHIP 10uF 20%	16V
C932	1-128-004-11	ELECT CHIP 10uF 20%	16V
C934	1-128-004-11	ELECT CHIP 10uF 20%	16V
C935	1-128-004-11	ELECT CHIP 10uF 20%	16V
C936	1-128-004-11	ELECT CHIP 10uF 20%	16V
C937	1-128-004-11	ELECT CHIP 10uF 20%	16V
C938	1-128-004-11	ELECT CHIP 10uF 20%	16V
C939	1-163-023-00	CERAMIC CHIP 0.015uF 5%	50V
C940	1-163-023-00	CERAMIC CHIP 0.015uF 5%	50V
C941	1-163-019-00	CERAMIC CHIP 0.0068uF 10%	50V
C942	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C943	1-163-019-00	CERAMIC CHIP 0.0068uF 10%	50V
C944	1-164-161-11	CERAMIC CHIP 0.0022uF 10%	100V
C945	1-128-530-11	ELECT CHIP 33uF 20%	10V
C950	1-128-004-11	ELECT CHIP 10uF 20%	16V
		< CONNECTOR >	
CN901	1-695-324-11	CONNECTOR, BOARD TO BOARD 42P	
* CN902	1-764-712-11	CONNECTOR, FFC/FPC (LIF) 13P	
		< DIODE >	
D901	8-719-027-77	DIODE MA796	
D909	8-719-404-49	DIODE MA111	
D910	8-719-404-49	DIODE MA111	
		< IC >	
IC901	8-759-295-31	IC MB3799-03PFV-G-BND-ER	
		< JACK >	
J901	1-537-281-41	TERMINAL BOARD (BATTERY TERMINAL)	
J902	1-565-276-21	JACK, ULTRA SMALL 1P (LANC)	
J903	1-568-027-11	JACK, SMALL TYPE 1P (PHONES)(TRV30E)	
J903	1-569-950-21	JACK (PHONES)(TRV50E/TRV70E)	

Be sure to read "Note on the CCD Imager replacement" on page 4-6 when changing the CCD imager.

< COIL >

Ref. No.	Part No.	Description	Remark
L901	1-424-653-11	COIL, CHOKE 10uH	
L902	1-424-653-11	COIL, CHOKE 10uH	
L903	1-424-653-11	COIL, CHOKE 10uH	
L904	1-409-556-11	COIL, CHOKE 47uH	
L905	1-424-674-11	COIL, CHOKE 22uH	
L906	1-409-556-11	COIL, CHOKE 47uH	
L907	1-424-674-11	COIL, CHOKE 22uH	
L908	1-424-674-11	COIL, CHOKE 22uH	
L909	1-412-056-11	INDUCTOR CHIP 4.7uH	
L910	1-412-056-11	INDUCTOR CHIP 4.7uH	
L911	1-412-056-11	INDUCTOR CHIP 4.7uH	
L912	1-412-056-11	INDUCTOR CHIP 4.7uH	
L913	1-412-056-11	INDUCTOR CHIP 4.7uH	
L914	1-412-064-11	INDUCTOR CHIP 100uH	
L915	1-412-064-11	INDUCTOR CHIP 100uH	
L916	1-412-056-11	INDUCTOR CHIP 4.7uH	
L917	1-412-056-11	INDUCTOR CHIP 4.7uH	

< IC LINK >

Ref. No.	Part No.	Description	Remark
⚠PS251	1-533-284-11	LINK, CHIP IC (SOC1600 1.6A)	
⚠PS252	1-533-284-11	LINK, CHIP IC (SOC1600 1.6A)	
⚠PS253	1-533-284-11	LINK, CHIP IC (SOC1600 1.6A)	
⚠PS254	1-533-284-11	LINK, CHIP IC (SOC1600 1.6A)	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q901	8-729-420-12	TRANSISTOR XN4213	
Q902	8-729-804-41	TRANSISTOR 2SB1122-S	
Q903	8-729-823-82	TRANSISTOR FP101	
Q904	8-729-823-84	TRANSISTOR FP102	
Q905	8-729-823-82	TRANSISTOR FP101	
Q906	8-729-823-82	TRANSISTOR FP101	
Q907	8-729-823-82	TRANSISTOR FP101	
Q909	8-729-805-25	TRANSISTOR 2SB1121	
Q914	8-729-402-42	TRANSISTOR UN5213	
Q915	8-729-402-42	TRANSISTOR UN5213	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R901	1-218-872-11	METAL CHIP 11K 0.50% 1/16W	
R902	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R903	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R904	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R905	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R906	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R907	1-216-035-00	METAL CHIP 270 5% 1/10W	
R908	1-216-834-11	METAL CHIP 12K 5% 1/16W	
R909	1-216-031-00	METAL CHIP 180 5% 1/10W	
R910	1-216-029-00	METAL CHIP 150 5% 1/10W	
R911	1-216-029-00	METAL CHIP 150 5% 1/10W	
R912	1-216-029-00	METAL CHIP 150 5% 1/10W	
R913	1-216-041-00	METAL CHIP 470 5% 1/10W	
R915	1-216-864-11	METAL CHIP 0 5% 1/16W	
R918	1-216-819-11	METAL CHIP 680 5% 1/16W	
R919	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R920	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R921	1-412-052-21	INDUCTOR CHIP 1UH	
R922	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R923	1-412-052-21	INDUCTOR CHIP 1UH	
R924	1-412-979-21	INDUCTOR 1UH	
R925	1-216-864-11	METAL CHIP 0 5% 1/16W	
R927	1-216-864-11	METAL CHIP 0 5% 1/16W	
R928	1-216-852-11	METAL CHIP 390K 5% 1/16W	
R931	1-216-813-11	METAL CHIP 220 5% 1/16W	
R932	1-412-979-21	INDUCTOR 1UH (TRV50E/TRV70E)	
R933	1-412-979-21	INDUCTOR 1UH	
R936	1-412-979-21	INDUCTOR 1UH	
R937	1-216-864-11	METAL CHIP 0 5% 1/16W	
R938	1-216-864-11	METAL CHIP 0 5% 1/16W	
R940	1-216-864-11	METAL CHIP 0 5% 1/16W	
R941	1-218-849-11	METAL CHIP 1.2K 0.50% 1/16W	
R942	1-216-864-11	METAL CHIP 0 5% 1/16W	
R944	1-216-864-11	METAL CHIP 0 5% 1/16W	
R945	1-218-847-11	METAL CHIP 1K 0.50% 1/16W	

< TRANSFORMER >

Ref. No.	Part No.	Description	Remark
T901	1-426-938-11	TRANSFORMER, DC/DC CONVERTER	

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* 1-651-890-11 FP-49 FLEXIBLE BOARD (TRV50E/TRV70E)
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(Ref. No. 2,000 Series)

Ref. No.	Part No.	Description	Remark
SE691	1-810-725-31	SENSOR, ANGULAR VELOCITY	
SE692	1-810-725-41	SENSOR, ANGULAR VELOCITY	

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* A-7066-461-A HE-20P BOARD, COMPLETE (TRV70E)
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< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C1103	1-162-917-11	CERAMIC CHIP 15PF 5% 50V	
C1106	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C1107	1-162-917-11	CERAMIC CHIP 15PF 5% 50V	
C1108	1-162-925-11	CERAMIC CHIP 68PF 5% 50V	
C1109	1-162-928-11	CERAMIC CHIP 120PF 5% 50V	
C1110	1-162-909-11	CERAMIC CHIP 4PF 0.25PF 50V	
C1111	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1112	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1113	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C1114	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

HE-20

Ref. No.	Part No.	Description			Remark
C1115	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1116	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1117	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1118	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1119	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C1121	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1122	1-162-928-11	CERAMIC CHIP	120PF	5%	50V
C1123	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C1124	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C1125	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1126	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C1127	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C1128	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1129	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C1130	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1131	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1132	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1133	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C1134	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1135	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1136	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1137	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1138	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1139	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C1140	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1141	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1142	1-164-392-11	CERAMIC CHIP	390PF	5%	50V
C1143	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V
C1144	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C1146	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1147	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V
C1148	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C1151	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C1152	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1155	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1156	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C1157	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1160	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C1161	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V
C1162	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C1163	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C1164	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1165	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C1166	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C1167	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1168	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C1169	1-164-155-11	CERAMIC CHIP	75PF	5%	50V
C1170	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C1171	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1173	1-162-925-11	CERAMIC CHIP	68PF	5%	50V

Ref. No.	Part No.	Description			Remark
C1175	1-162-928-11	CERAMIC CHIP	120PF	5%	50V
C1176	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C1177	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C1178	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V
C1179	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C1180	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C1181	1-164-362-11	CERAMIC CHIP	470PF	5%	50V
C1182	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C1183	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1184	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1185	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C1186	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C1187	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C1188	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1189	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1192	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C1196	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C1198	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C1199	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
		< CONNECTOR >			
* CN1101	1-573-341-11	CONNECTOR, BOARD TO BOARD 26P			
		< DIODE >			
D1101	8-719-404-49	DIODE	MA111		
D1102	8-719-027-48	DIODE	MA142WA		
D1103	8-719-027-48	DIODE	MA142WA		
D1104	8-719-404-49	DIODE	MA111		
D1105	8-719-404-49	DIODE	MA111		
		< FILTER >			
FL1101	1-236-775-11	FILTER, LOW PASS (DEM)			
FL1102	1-239-112-21	FILTER, LOW PASS (Y)			
		< IC >			
IC1101	8-752-058-02	IC	CXA1509AR		
IC1102	8-759-070-51	IC	SN74HCU04ADB		
		< COIL >			
L1101	1-412-963-11	INDUCTOR	100uH		
L1102	1-412-954-11	INDUCTOR	18uH		
L1103	1-412-949-21	INDUCTOR	6.8uH		
L1104	1-412-961-11	INDUCTOR	68uH		
L1105	1-412-954-11	INDUCTOR	18uH		
L1106	1-412-945-11	INDUCTOR	3.3uH		
L1107	1-412-962-11	INDUCTOR	82uH		
L1108	1-412-954-11	INDUCTOR	18uH		
L1109	1-412-948-11	INDUCTOR	5.6uH		
L1110	1-412-951-11	INDUCTOR	10uH		
L1111	1-410-655-31	INDUCTOR CHIP	120uH		

Ref. No.	Part No.	Description	Remark
L1112	1-412-058-11	INDUCTOR CHIP 10uH	
L1113	1-412-058-11	INDUCTOR CHIP 10uH	
L1115	1-412-954-11	INDUCTOR 18uH	
L1116	1-412-946-11	INDUCTOR 3.9uH	
L1118	1-412-953-11	INDUCTOR 15uH	
L1119	1-412-949-21	INDUCTOR 6.8uH	
L1120	1-412-949-21	INDUCTOR 6.8uH	
L1121	1-412-951-11	INDUCTOR 10uH	
L1122	1-412-953-11	INDUCTOR 15uH	
L1123	1-412-944-11	INDUCTOR 2.7uH	
L1124	1-412-959-11	INDUCTOR 47uH	
L1125	1-412-962-11	INDUCTOR 82uH	
L1126	1-412-951-11	INDUCTOR 10uH	
L1128	1-412-962-11	INDUCTOR 82uH	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q1102	8-729-402-42	TRANSISTOR UN5213	
Q1103	8-729-012-50	TRANSISTOR 2SC4400-3/4/5	
Q1107	8-729-402-42	TRANSISTOR UN5213	
Q1110	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q1111	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q1113	8-729-012-50	TRANSISTOR 2SC4400-3/4/5	
Q1114	8-729-402-81	TRANSISTOR XN4501	
Q1115	8-729-012-50	TRANSISTOR 2SC4400-3/4/5	
Q1117	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q1118	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q1119	8-729-402-42	TRANSISTOR UN5213	
Q1120	8-729-403-35	TRANSISTOR UN5113	
Q1121	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q1122	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q1123	8-729-012-50	TRANSISTOR 2SC4400-3/4/5	
Q1125	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q1126	8-729-012-50	TRANSISTOR 2SC4400-3/4/5	
Q1127	8-729-403-35	TRANSISTOR UN5113	
Q1128	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q1129	8-729-012-50	TRANSISTOR 2SC4400-3/4/5	
Q1130	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q1131	8-729-824-02	TRANSISTOR 2SA1838	
Q1132	8-729-012-50	TRANSISTOR 2SC4400-3/4/5	
Q1133	8-729-012-50	TRANSISTOR 2SC4400-3/4/5	
Q1134	8-729-402-42	TRANSISTOR UN5213	
Q1135	8-729-402-42	TRANSISTOR UN5213	
Q1136	8-729-402-42	TRANSISTOR UN5213	
Q1137	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q1138	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q1139	8-729-402-42	TRANSISTOR UN5213	
Q1143	8-729-403-35	TRANSISTOR UN5113	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R1100	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R1101	1-216-814-11	METAL CHIP 270 5% 1/16W	
R1102	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1103	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1104	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1105	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1106	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R1107	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1108	1-216-813-11	METAL CHIP 220 5% 1/16W	
R1109	1-216-813-11	METAL CHIP 220 5% 1/16W	
R1110	1-216-815-11	METAL CHIP 330 5% 1/16W	
R1111	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R1112	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R1113	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1114	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1115	1-216-820-11	METAL CHIP 820 5% 1/16W	
R1116	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1118	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R1119	1-216-815-11	METAL CHIP 330 5% 1/16W	
R1120	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R1123	1-216-824-11	METAL CHIP 1.8K 5% 1/16W	
R1124	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R1125	1-216-834-11	METAL CHIP 12K 5% 1/16W	
R1127	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R1128	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R1129	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1130	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1131	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1132	1-216-820-11	METAL CHIP 820 5% 1/16W	
R1134	1-216-820-11	METAL CHIP 820 5% 1/16W	
R1135	1-216-814-11	METAL CHIP 270 5% 1/16W	
R1136	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1138	1-216-816-11	METAL CHIP 390 5% 1/16W	
R1148	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R1149	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R1151	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R1152	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1153	1-216-818-11	METAL CHIP 560 5% 1/16W	
R1154	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1155	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1156	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R1157	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R1158	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R1159	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R1160	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1161	1-216-819-11	METAL CHIP 680 5% 1/16W	
R1162	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R1163	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1164	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R1165	1-216-814-11	METAL CHIP 270 5% 1/16W	
R1166	1-216-815-11	METAL CHIP 330 5% 1/16W	

Ref. No.	Part No.	Description	Remark
R1167	1-216-818-11	METAL CHIP 560 5% 1/16W	
R1168	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R1169	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R1170	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R1171	1-216-842-11	METAL CHIP 56K 5% 1/16W	
R1172	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R1173	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R1174	1-216-813-11	METAL CHIP 220 5% 1/16W	
R1175	1-216-813-11	METAL CHIP 220 5% 1/16W	
R1176	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1177	1-216-814-11	METAL CHIP 270 5% 1/16W	
R1178	1-216-822-11	METAL CHIP 1.2K 5% 1/16W	
R1179	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1181	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1182	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R1183	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1184	1-216-819-11	METAL CHIP 680 5% 1/16W	
R1185	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1186	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1187	1-216-815-11	METAL CHIP 330 5% 1/16W	
R1188	1-216-820-11	METAL CHIP 820 5% 1/16W	
R1189	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1191	1-216-813-11	METAL CHIP 220 5% 1/16W	
R1194	1-216-819-11	METAL CHIP 680 5% 1/16W	
R1195	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R1196	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1197	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1198	1-216-819-11	METAL CHIP 680 5% 1/16W	
R1199	1-216-819-11	METAL CHIP 680 5% 1/16W	
R1201	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1202	1-216-813-11	METAL CHIP 220 5% 1/16W	
R1203	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1204	1-216-815-11	METAL CHIP 330 5% 1/16W	
R1205	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1206	1-216-815-11	METAL CHIP 330 5% 1/16W	
R1207	1-216-815-11	METAL CHIP 330 5% 1/16W	
R1208	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R1209	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1210	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R1212	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1213	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1214	1-216-820-11	METAL CHIP 820 5% 1/16W	
R1215	1-216-819-11	METAL CHIP 680 5% 1/16W	
R1216	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R1217	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R1218	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1219	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1220	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1221	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1222	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1223	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1224	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R1225	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1229	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R1231	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1232	1-216-811-11	METAL CHIP 150 5% 1/16W	

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LS-33 BOARD (Ref. No. 7,000 Series)
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< DIODE >

Ref. No.	Part No.	Description	Remark
D001	8-719-989-52	DIODE GL4600S	

< HALL ELEMENT >

Ref. No.	Part No.	Description	Remark
H001	8-719-987-62	DIODE LT140SAZ	
H002	8-719-987-62	DIODE LT140SAZ	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q001	8-729-012-46	TRANSISTOR PT4600FS	
Q002	8-729-012-46	TRANSISTOR PT4600FS	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R003	1-216-033-00	METAL CHIP 220 5% 1/10W	
R004	1-216-033-00	METAL CHIP 220 5% 1/10W	
R010	1-216-033-00	METAL CHIP 220 5% 1/10W	
R011	1-216-033-00	METAL CHIP 220 5% 1/10W	

< SWITCH >

Ref. No.	Part No.	Description	Remark
S002	1-572-987-11	SWITCH, PUSH (3 KEY) (TAPE SELECT, REC PROOF)	

****

Ref. No.	Part No.	Description	Remark
*	A-7072-233-A	MA-237P (MO) BOARD, COMPLETE (TRV30E)	

****

Ref. No.	Part No.	Description	Remark
*	A-7072-239-A	MA-237P (ST) BOARD, COMPLETE (TRV50E/TRV70E)	

****

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C015	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	(TRV50E/TRV70E)
C017	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	(TRV50E/TRV70E)
C018	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	(TRV30E)
C019	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	(TRV30E)
C020	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	(TRV50E/TRV70E)
C021	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	(TRV30E)

Ref. No.	Part No.	Description	Remark
C022	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	(TRV50E/TRV70E)
C023	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	(TRV50E/TRV70E)
C024	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	(TRV50E/TRV70E)
C026	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	(TRV30E)
C027	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	(TRV50E/TRV70E)
C028	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	(TRV50E/TRV70E)
C029	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	(TRV50E/TRV70E)
C030	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	(TRV50E/TRV70E)
C031	1-164-346-11	CERAMIC CHIP 1uF 16V	(TRV30E)
C032	1-164-346-11	CERAMIC CHIP 1uF 16V	(TRV30E)
C033	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	(TRV30E)
C034	1-164-343-11	CERAMIC CHIP 0.056uF 10% 25V	(TRV50E/TRV70E)
C035	1-164-343-11	CERAMIC CHIP 0.056uF 10% 25V	(TRV50E/TRV70E)
C036	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	(TRV50E/TRV70E)
C037	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	(TRV50E/TRV70E)
C039	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	(TRV50E/TRV70E)
C040	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	(TRV50E/TRV70E)
C042	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	(TRV50E/TRV70E)
C043	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	(TRV50E/TRV70E)
C044	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	(TRV50E/TRV70E)
C045	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	(TRV50E/TRV70E)
C048	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C049	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	(TRV50E/TRV70E)
		< CONNECTOR >	
CN015	1-764-706-11	CONNECTOR, FFC/FPC (LIF) 7P	
CN016	1-764-710-21	CONNECTOR, FFC/FPC (LIF) 11P	
		< DIODE >	
D015	8-719-404-49	DIODE MA111	
D016	8-719-404-19	DIODE LN1251C (TALLY)	
		< IC >	
IC015	8-759-339-62	IC NJM2118M-TE2	(TRV30E)
IC016	8-759-161-31	IC LA7471M-TE-B	(TRV50E/TRV70E)
		< JACK >	
J015	1-568-027-11	JACK, SMALL TYPE 1P (EXT MIC)	(TRV30E)
J015	1-691-737-11	JACK(SMALL TYPE)(EXT MIC)	(TRV50E/TRV70E)
		< COIL >	
L015	1-412-939-11	INDUCTOR 1uH	
L016	1-412-939-11	INDUCTOR 1uH	
L017	1-412-939-11	INDUCTOR 1uH	(TRV50E/TRV70E)
		< TRANSISTOR >	
Q015	8-729-420-24	TRANSISTOR 2SB1218A-QRS	(TRV30E)
		< RESISTOR >	
R015	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	(TRV50E/TRV70E)
R016	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	(TRV50E/TRV70E)
R017	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV50E/TRV70E)
R018	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV30E)
R019	1-216-839-11	METAL CHIP 33K 5% 1/16W	(TRV30E)
R020	1-216-839-11	METAL CHIP 33K 5% 1/16W	(TRV30E)
R021	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	(TRV30E)
R022	1-216-809-11	METAL CHIP 100 5% 1/16W	(TRV30E)
R023	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	(TRV50E/TRV70E)
R024	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	(TRV50E/TRV70E)
R025	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV70E)
R026	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV70E)
R027	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV70E)
R028	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV70E)
R030	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV70E)
R031	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV70E)
R033	1-216-835-11	METAL CHIP 15K 5% 1/16W	(TRV50E/TRV70E)
R034	1-216-835-11	METAL CHIP 15K 5% 1/16W	(TRV50E/TRV70E)
R035	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV50E/TRV70E)
R036	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV50E/TRV70E)
R037	1-216-839-11	METAL CHIP 33K 5% 1/16W	(TRV50E/TRV70E)
R038	1-216-839-11	METAL CHIP 33K 5% 1/16W	(TRV50E/TRV70E)

Ref. No.	Part No.	Description	Remark
R039	1-216-849-11	METAL CHIP 220K 5% 1/16W	(TRV50E/TRV70E)
R042	1-216-838-11	METAL CHIP 27K 5% 1/16W	(TRV50E/TRV70E)
R043	1-216-838-11	METAL CHIP 27K 5% 1/16W	(TRV50E/TRV70E)
R044	1-216-809-11	METAL CHIP 100 5% 1/16W	(TRV30E)
R045	1-216-815-11	METAL CHIP 330 5% 1/16W	
		**	
*	A-7072-243-A	MF-270 BOARD, COMPLETE	(TRV50E/TRV70E)
		*************************************	
			(Ref. No. 6,000 Series)
		< CONNECTOR >	
CN301	1-764-705-11	CONNECTOR, FFC/FPC (LIF) 6P	
		< VARIABLE RESISTOR >	
RV301	1-241-865-21	RES, VAR, CARBON 10K/10K	(MANUAL FOCUS)
		< SWITCH >	
S301	1-572-895-21	SWITCH, SLIDE (FOCUS)	
		**	
*	A-7072-234-A	MI-25P BOARD, COMPLETE	(TRV30E)
		******************************	
*	A-7072-240-A	MI-25P BOARD, COMPLETE	(TRV50E/TRV70E)
		*************************************	
		< CAPACITOR >	
C001	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C002	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	(TRV30E)
C003	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C004	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C005	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C008	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	(TRV50E/TRV70E)
C009	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	(TRV50E/TRV70E)
C010	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
		< CONNECTOR >	
* CN001	1-580-055-21	PIN, CONNECTOR 2P	
* CN002	1-580-055-21	PIN, CONNECTOR 2P	(TRV50E/TRV70E)
CN003	1-764-706-11	CONNECTOR, FFC/FPC (LIF) 7P	
		< DIODE >	
D001	8-719-404-49	DIODE MA111	
D003	8-719-404-49	DIODE MA111	

Ref. No.	Part No.	Description	Remark
		< IC >	
IC001	8-749-923-29	IC RS-20E-T	
		< TRANSISTOR >	
Q001	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q002	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV50E/TRV70E)
		< RESISTOR >	
R001	1-216-821-11	METAL CHIP 1K 5% 1/16W	(TRV30E)
R001	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	(TRV50E/TRV70E)
R002	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R003	1-216-821-11	METAL CHIP 1K 5% 1/16W	(TRV30E)
R003	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV50E/TRV70E)
R004	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R005	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R006	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	(TRV50E/TRV70E)
R007	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV50E/TRV70E)
R008	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV50E/TRV70E)
R009	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV50E/TRV70E)
R010	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	(TRV50E/TRV70E)
		**	
*	A-7066-443-A	PD-60P BOARD, COMPLETE	(TRV30E)
		******************************	
			(Ref. No. 5,000 Series)
*	3-960-000-01	TERMINAL, FL	
		< CAPACITOR >	
C002	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C003	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C004	1-164-505-11	CERAMIC CHIP 2.2uF 16V	
C005	1-135-211-11	TANTAL. CHIP 6.8uF 20% 6.3V	
C006	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C007	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C008	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C010	1-164-505-11	CERAMIC CHIP 2.2uF 16V	
C011	1-164-505-11	CERAMIC CHIP 2.2uF 16V	
C012	1-135-216-11	TANTALUM CHIP 10uF 20% 10V	
C013	1-162-918-11	CERAMIC CHIP 18PF 5% 50V	
C014	1-162-928-11	CERAMIC CHIP 120PF 5% 50V	
C015	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C016	1-135-212-21	TANTAL. CHIP 2.2uF 20% 25V	
C017	1-164-505-11	CERAMIC CHIP 2.2uF 16V	

Ref. No.	Part No.	Description			Remark
C016	1-135-212-21	TANTAL. CHIP	2.2uF	20%	25V
C017	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C018	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C019	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C020	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C021	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C022	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C023	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C024	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C025	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C026	1-135-211-11	TANTAL. CHIP	6.8uF	20%	6.3V
C027	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C028	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C029	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C030	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C031	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C033	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C034	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C036	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C037	1-109-986-11	FILM CHIP	0.033uF	5%	50V
⚠C038	1-109-858-11	CERAMIC CHIP	15PF	10%	3KV
C101	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C102	1-107-685-11	TANTAL. CHIP	15uF	20%	6.3V
C103	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C104	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C105	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C106	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C107	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C108	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C109	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C110	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C111	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C112	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C113	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C114	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C115	1-164-363-11	CERAMIC CHIP	560PF	5%	50V
C118	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
C120	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C121	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V
C122	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C125	1-107-685-11	TANTAL. CHIP	15uF	20%	6.3V
C126	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C127	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C128	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C129	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C130	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C131	1-135-333-11	TANTAL. CHIP	1uF	20%	16V
C132	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C133	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C134	1-164-471-11	CERAMIC CHIP	680PF	5%	50V

Ref. No.	Part No.	Description			Remark
C135	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C137	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C138	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C139	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C140	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C141	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C142	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C143	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C144	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C145	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C146	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C148	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C149	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C150	1-107-685-11	TANTAL. CHIP	15uF	20%	6.3V
C151	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C152	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C153	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C154	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C155	1-216-864-11	METAL CHIP	0	5%	1/16W
C156	1-135-179-21	TANTAL. CHIP	2.2uF	20%	16V
C157	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C158	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C159	1-135-333-11	TANTAL. CHIP	1uF	20%	16V
C160	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C161	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C162	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C163	1-107-685-11	TANTAL. CHIP	15uF	20%	6.3V
C164	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C165	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C167	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C168	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C170	1-135-213-21	TANTAL. CHIP	3.3uF	20%	25V

< CONNECTOR >

Ref. No.	Part No.	Description
* CN101	1-573-984-11	CONNECTOR, BOARD TO BOARD 10P
CN102	1-770-630-21	PIN, CONNECTOR 13P
CN103	1-770-626-21	PIN, CONNECTOR 9P

< DIODE >

Ref. No.	Part No.	Description	
D002	8-719-404-49	DIODE	MA111
D003	8-719-989-33	DIODE	FC806
D004	8-719-941-86	DIODE	DAN202U
D005	8-719-404-49	DIODE	MA111
D006	8-719-404-49	DIODE	MA111
D007	8-719-404-49	DIODE	MA111
D008	8-719-049-57	DIODE	CL-170B-X-T
D101	8-719-951-20	LED	BR1102W
D103	8-713-102-80	DIODE	1T369-01
D104	8-719-404-49	DIODE	MA111
D105	8-719-420-14	DIODE	MA8082-M

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
D106	8-719-404-49	DIODE MA111	
D107	8-713-102-80	DIODE 1T369-01	
D108	8-719-404-49	DIODE MA111	
D109	8-719-422-97	DIODE MA8091-M	
D110	8-719-423-32	DIODE MA8120-M	
D111	8-719-420-51	DIODE MA729	
		< IC >	
IC001	8-759-521-35	IC TL5001CD-E2	
IC002	8-759-521-35	IC TL5001CD-E2	
IC101	8-759-075-71	IC TA75S393F	
IC102	8-759-062-66	IC TC7S66F	
IC103	8-759-298-99	IC LZ95D864	
IC104	8-759-058-41	IC NJM3416V	
IC105	8-759-251-40	IC MB88E346PFV-G-BND-ER	
IC106	8-752-070-03	IC CXA1785AR	
		< COIL >	
L001	1-412-062-11	INDUCTOR CHIP 47uH	
L002	1-412-746-11	INDUCTOR CHIP 10uH	
L003	1-412-963-11	INDUCTOR 100uH	
L004	1-412-963-11	INDUCTOR 100uH	
L005	1-412-963-11	INDUCTOR 100uH	
L006	1-412-028-11	INDUCTOR CHIP 4.7uH	
L007	1-424-674-11	COIL, CHOKE 22uH	
L008	1-406-924-11	COIL, CHOKE 150uH	
L101	1-412-028-11	INDUCTOR CHIP 4.7uH	
L102	1-412-031-11	INDUCTOR CHIP 47uH	
L103	1-412-955-11	INDUCTOR 22uH	
L104	1-412-957-11	INDUCTOR 33uH	
L105	1-412-030-11	INDUCTOR CHIP 22uH	
L107	1-412-956-21	INDUCTOR 27uH	
		< IC LINK >	
⚠PS101	1-576-122-21	LINK, IC (CCP2E10 0.4A)	
		< TRANSISTOR >	
Q001	8-729-420-20	TRANSISTOR XN4312	
Q003	8-729-402-42	TRANSISTOR UN5213	
Q004	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q005	8-729-804-41	TRANSISTOR 2SB1122-S	
Q006	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q007	8-729-402-42	TRANSISTOR UN5213	
Q008	8-729-823-84	TRANSISTOR FP102	
Q010	8-729-028-36	TRANSISTOR FX507-TL1	
Q012	8-729-403-27	TRANSISTOR XN4401	
Q101	8-729-402-42	TRANSISTOR UN5213	
Q102	8-729-402-42	TRANSISTOR UN5213	
Q103	8-729-810-13	TRANSISTOR UN5112	
Q104	8-729-020-99	TRANSISTOR UN5215-RS	

Ref. No.	Part No.	Description	Remark
Q105	8-729-420-53	TRANSISTOR UN5115	
Q106	8-729-402-42	TRANSISTOR UN5213	
Q109	8-729-402-42	TRANSISTOR UN5213	
Q110	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q111	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q112	8-729-402-42	TRANSISTOR UN5213	
Q113	8-729-026-30	TRANSISTOR 2SJ346-TE85L	
Q114	8-729-420-20	TRANSISTOR XN4312	
		< RESISTOR >	
R001	1-216-864-11	METAL CHIP 0 5% 1/16W	
R002	1-216-813-11	METAL CHIP 220 5% 1/16W	
R003	1-218-897-11	METAL CHIP 120K 0.50% 1/16W	
R004	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R005	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R006	1-218-875-11	METAL CHIP 15K 0.50% 1/16W	
R007	1-218-869-11	METAL CHIP 8.2K 0.50% 1/16W	
R008	1-218-853-11	METAL CHIP 1.8K 0.50% 1/16W	
R009	1-218-881-11	METAL CHIP 27K 0.50% 1/16W	
R010	1-218-839-11	METAL GLAZE 470 0.50% 1/16W	
R011	1-218-881-11	METAL CHIP 27K 0.50% 1/16W	
R012	1-218-843-11	METAL CHIP 680 0.50% 1/16W	
R013	1-218-877-11	METAL CHIP 18K 0.50% 1/16W	
R014	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R015	1-216-818-11	METAL CHIP 560 5% 1/16W	
R016	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R020	1-216-864-11	METAL CHIP 0 5% 1/16W	
R021	1-216-864-11	METAL CHIP 0 5% 1/16W	
R022	1-216-864-11	METAL CHIP 0 5% 1/16W	
R023	1-218-867-11	METAL CHIP 6.8K 0.50% 1/16W	
R024	1-218-881-11	METAL CHIP 27K 0.50% 1/16W	
R025	1-216-818-11	METAL CHIP 560 5% 1/16W	
R026	1-218-897-11	METAL CHIP 120K 0.50% 1/16W	
R027	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R028	1-216-818-11	METAL CHIP 560 5% 1/16W	
R029	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R030	1-218-839-11	METAL GLAZE 470 0.50% 1/16W	
R031	1-218-839-11	METAL GLAZE 470 0.50% 1/16W	
R032	1-218-863-11	METAL CHIP 4.7K 0.50% 1/16W	
R034	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R035	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R036	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R037	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R038	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R039	1-216-807-11	METAL CHIP 68 5% 1/16W	
R101	1-216-817-11	METAL CHIP 470 5% 1/16W	
R103	1-216-864-11	METAL CHIP 0 5% 1/16W	
R104	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R105	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R107	1-216-833-11	METAL CHIP 10K 5% 1/16W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description				Remark
R108	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R110	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R113	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R114	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R115	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R116	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R118	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R119	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R120	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R121	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R122	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R123	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R124	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R125	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R126	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R127	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R128	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R129	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R130	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R131	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R132	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R133	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R134	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R135	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R136	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R137	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R138	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R139	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R140	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R141	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R143	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R144	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R145	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R146	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R147	1-220-397-11	METAL GLAZE	4.7M	5%	1/16W	
R148	1-216-818-11	METAL CHIP	560	5%	1/16W	
R149	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R151	1-216-859-11	METAL GLAZE	1.5M	5%	1/16W	
R152	1-216-817-11	METAL CHIP	470	5%	1/16W	
R153	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R155	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R156	1-218-877-11	METAL CHIP	18K	0.50%	1/16W	
R157	1-216-854-11	METAL CHIP	560K	5%	1/16W	
R158	1-216-818-11	METAL CHIP	560	5%	1/16W	
R159	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R160	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R161	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R163	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R164	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R165	1-216-847-11	METAL CHIP	150K	5%	1/16W	
R166	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R167	1-216-842-11	METAL CHIP	56K	5%	1/16W	
R168	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R169	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R170	1-220-397-11	METAL GLAZE	4.7M	5%	1/16W	
R171	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R172	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R173	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R174	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R175	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R176	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R177	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R178	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R179	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R180	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R181	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R182	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R183	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R184	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R185	1-216-842-11	METAL CHIP	56K	5%	1/16W	
R186	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R187	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R188	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R189	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R190	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R191	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R192	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R193	1-216-807-11	METAL CHIP	68	5%	1/16W	
R194	1-216-807-11	METAL CHIP	68	5%	1/16W	
R195	1-216-807-11	METAL CHIP	68	5%	1/16W	
R201	1-216-864-11	METAL CHIP	0	5%	1/16W	
R202	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R203	1-218-887-11	METAL CHIP	47K	0.50%	1/16W	
R204	1-218-887-11	METAL CHIP	47K	0.50%	1/16W	
R205	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R208	1-216-818-11	METAL CHIP	560	5%	1/16W	
R209	1-216-818-11	METAL CHIP	560	5%	1/16W	
R210	1-216-818-11	METAL CHIP	560	5%	1/16W	
R211	1-216-818-11	METAL CHIP	560	5%	1/16W	
R212	1-216-818-11	METAL CHIP	560	5%	1/16W	
R213	1-216-818-11	METAL CHIP	560	5%	1/16W	
R214	1-218-875-11	METAL CHIP	15K	0.50%	1/16W	
R215	1-218-875-11	METAL CHIP	15K	0.50%	1/16W	
R216	1-218-863-11	METAL CHIP	4.7K	0.50%	1/16W	
R217	1-218-871-11	METAL CHIP	10K	0.50%	1/16W	
R218	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R219	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R221	1-216-864-11	METAL CHIP	0	5%	1/16W	
R222	1-216-864-11	METAL CHIP	0	5%	1/16W	
R224	1-216-864-11	METAL CHIP	0	5%	1/16W	

Ref. No.	Part No.	Description			Remark
R228	1-216-864-11	METAL CHIP	0	5%	1/16W
		< VARIABLE RESISTOR >			
RV101	1-223-733-21	RES, VAR, CARBON 10K (BRIGHT)			
		< SWITCH >			
S101	1-572-467-21	SWITCH, PUSH (1 KEY)(REVERSE)			
		< TRANSFORMER >			
T001	1-426-714-21	TRANSFORMER, CONVERTER			
⚠T002	1-423-869-51	TRANSFORMER, INVERTER			
		< FLEXIBLE BOARD >			
W101	1-653-931-11	FP-150 FLEXIBLE BOARD			
		< OSCILLATOR >			
X101	1-579-661-21	OSCILLATOR, CRYSTAL (4.43MHz)			
**					
*	A-7066-463-A	PD-62P BOARD, COMPLETE (TRV50E/TRV70E) ************************************ (Ref. No. 6,000 Series)			
		< CAPACITOR >			
C001	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C002	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C003	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C004	1-135-211-11	TANTAL. CHIP	6.8uF	20%	6.3V
C005	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C006	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C007	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C008	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C009	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C011	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C013	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C014	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C015	1-109-986-11	FILM CHIP	0.033uF	5%	50V
C016	1-109-986-11	FILM CHIP	0.033uF	5%	50V
⚠C017	1-107-525-11	CERAMIC CHIP	18PF	10%	3KV
C061	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C062	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C063	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C064	1-135-211-11	TANTAL. CHIP	6.8uF	20%	6.3V
C065	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C066	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C068	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C069	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C070	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C071	1-135-216-11	TANTALUM CHIP	10uF	20%	10V
C072	1-162-944-11	CERAMIC CHIP	18PF	5%	50V
C073	1-162-954-11	CERAMIC CHIP	120PF	5%	50V
C074	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C075	1-135-212-21	TANTAL. CHIP	2.2uF	20%	25V
C076	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C077	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C078	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C079	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C080	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C081	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C102	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C105	1-135-091-91	TANTAL. CHIP	1uF	20%	16V
C107	1-164-363-11	CERAMIC CHIP	560PF	5%	50V
C108	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C109	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C111	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C112	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C113	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C114	1-164-363-11	CERAMIC CHIP	560PF	5%	50V
C115	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C116	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C118	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C119	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C124	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C125	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V
C126	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C129	1-107-685-11	TANTAL. CHIP	15uF	20%	6.3V
C131	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C132	1-135-333-11	TANTAL. CHIP	1uF	20%	16V
C136	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C137	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C144	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C145	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C146	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C148	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C151	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C152	1-164-337-11	CERAMIC CHIP	2.2uF		16V
C154	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C155	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C160	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C161	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C163	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C164	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C165	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C166	1-107-685-11	TANTAL. CHIP	15uF	20%	6.3V
C168	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C169	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C174	1-165-112-11	CERAMIC CHIP	0.33uF		16V
C175	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C176	1-162-974-11	CERAMIC CHIP	0.01uF		50V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description	Remark
C177	1-165-112-11	CERAMIC CHIP 0.33uF	16V
C179	1-107-685-11	TANTAL. CHIP 15uF 20%	6.3V
C180	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C182	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C183	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C184	1-165-319-11	CERAMIC CHIP 0.1uF	50V
		< CONNECTOR >	
* CN101	1-573-984-11	CONNECTOR, BOARD TO BOARD 10P	
CN102	1-770-630-21	PIN, CONNECTOR 13P	
CN103	1-770-626-21	PIN, CONNECTOR 9P	
CN104	1-573-368-11	CONNECTOR, FFC/FPC 28P	
CN106	1-691-487-21	CONNECTOR, FFC/FPC 8P	
		< DIODE >	
D001	8-719-404-49	DIODE MA111	
D002	8-719-404-49	DIODE MA111	
D003	8-719-049-57	DIODE CL-170B-X-T	
D005	8-719-420-51	DIODE MA729	
D010	8-719-404-49	DIODE MA111	
D011	8-719-989-33	DIODE FC806	
D012	8-719-941-86	DIODE DAN202U	
D018	8-719-404-49	DIODE MA111	
D101	8-713-102-80	DIODE 1T369-01	
D103	8-713-102-80	DIODE 1T369-01	
D105	8-719-420-14	DIODE MA8082-M	
D107	8-719-404-49	DIODE MA111	
D108	8-719-404-49	DIODE MA111	
D110	8-713-102-80	DIODE 1T369-01	
D111	8-719-951-20	LED BR1102W	
		< IC >	
IC001	8-759-521-35	IC TL5001CD-E2	
IC006	8-759-521-35	IC TL5001CD-E2	
IC102	8-759-058-41	IC NJM3416V(TE2)	
IC103	8-759-336-98	IC NM7011T-E2	
IC104	8-759-251-40	IC MB88E346PFV-G-BND-ER	
IC105	8-752-070-03	IC CXA1785AR-T4	
		< COIL >	
L001	1-412-027-11	INDUCTOR CHIP 2.2uH	
L002	1-424-674-11	COIL, CHOKE 22uH	
L003	1-406-924-11	COIL, CHOKE 150uH	
L007	1-412-062-11	INDUCTOR CHIP 47uH	
L008	1-412-746-11	INDUCTOR CHIP 10uH	
L009	1-412-963-11	INDUCTOR 100uH	
L010	1-412-963-11	INDUCTOR 100uH	
L011	1-412-963-11	INDUCTOR 100uH	
L101	1-412-031-11	INDUCTOR CHIP 47uH	
L103	1-412-029-11	INDUCTOR CHIP 10uH	

Ref.No.	Part No.	Description	Remark
L104	1-412-030-11	INDUCTOR CHIP 22uH	
L106	1-412-956-21	INDUCTOR 27uH	
L107	1-412-953-11	INDUCTOR 15uH	
L110	1-412-029-11	INDUCTOR CHIP 10uH	
L111	1-412-952-11	INDUCTOR 12uH	
L112	1-412-028-11	INDUCTOR CHIP 4.7uH	
		< TRANSISTOR >	
Q001	8-729-402-42	TRANSISTOR UN5213	
Q002	8-729-804-41	TRANSISTOR 2SB1122-S	
Q003	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q004	8-729-402-42	TRANSISTOR UN5213	
Q005	8-729-823-84	TRANSISTOR FP102	
Q006	8-729-402-42	TRANSISTOR UN5213	
Q007	8-729-028-36	TRANSISTOR FX507-TL1	
Q008	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q009	8-729-403-27	TRANSISTOR XN4401	
Q010	8-729-420-20	TRANSISTOR XN4312	
Q101	8-729-402-42	TRANSISTOR UN5213	
Q102	8-729-420-20	TRANSISTOR XN4312	
Q106	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q108	8-729-402-42	TRANSISTOR UN5213	
Q109	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q111	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q112	8-729-402-42	TRANSISTOR UN5213	
Q114	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q115	8-729-026-30	TRANSISTOR 2SJ346-TE85L	
		< RESISTOR >	
R001	1-218-867-11	METAL CHIP 6.8K 0.50% 1/16W	
R002	1-218-881-11	METAL CHIP 27K 0.50% 1/16W	
R003	1-216-818-11	METAL CHIP 560 5% 1/16W	
R004	1-218-897-11	METAL CHIP 120K 0.50% 1/16W	
R005	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R006	1-216-818-11	METAL CHIP 560 5% 1/16W	
R007	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R008	1-211-987-11	METAL CHIP 56 0.50% 1/16W	
R009	1-218-846-11	METAL CHIP 910 0.50% 1/16W	
R010	1-218-708-11	METAL CHIP 4.7K 0.50% 1/16W	
R011	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R012	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R013	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R014	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R015	1-216-807-11	METAL CHIP 68 5% 1/16W	
R016	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R017	1-218-724-11	METAL CHIP 22K 0.50% 1/16W	
R018	1-218-720-11	METAL CHIP 15K 0.50% 1/16W	
R019	1-218-714-11	METAL CHIP 8.2K 0.50% 1/16W	
R020	1-218-881-11	METAL CHIP 27K 0.50% 1/16W	
R021	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	

Ref.No.	Part No.	Description				Remark
R022	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R023	1-218-688-11	METAL CHIP	680	0.50%	1/16W	
R024	1-218-879-11	METAL CHIP	22K	0.50%	1/16W	
R025	1-218-688-11	METAL CHIP	680	0.50%	1/16W	
R026	1-216-298-00	METAL CHIP	2.2	5%	1/10W	
R027	1-218-722-11	METAL CHIP	18K	0.50%	1/16W	
R028	1-216-864-11	METAL CHIP	0	5%	1/16W	
R033	1-216-864-11	METAL CHIP	0	5%	1/16W	
R034	1-216-864-11	METAL CHIP	0	5%	1/16W	
R035	1-216-864-11	METAL CHIP	0	5%	1/16W	
R038	1-216-864-11	METAL CHIP	0	5%	1/16W	
R041	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R098	1-216-813-11	METAL CHIP	220	5%	1/16W	
R099	1-218-897-11	METAL CHIP	120K	0.50%	1/16W	
R100	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R101	1-216-817-11	METAL CHIP	470	5%	1/16W	
R102	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R103	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R104	1-216-864-11	METAL CHIP	0	5%	1/16W	
R105	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R107	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R108	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R109	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R110	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R111	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R113	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R114	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R115	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R116	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R117	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R118	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R119	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R120	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R121	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R122	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R123	1-216-812-11	METAL CHIP	180	5%	1/16W	
R124	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R125	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R126	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R127	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R128	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R129	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R131	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R132	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R133	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R134	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R136	1-216-816-11	METAL CHIP	390	5%	1/16W	
R137	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R138	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R139	1-216-818-11	METAL CHIP	560	5%	1/16W	
R143	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R144	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R149	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R153	1-216-818-11	METAL CHIP	560	5%	1/16W	
R154	1-216-817-11	METAL CHIP	470	5%	1/16W	
R155	1-216-842-11	METAL CHIP	56K	5%	1/16W	
R156	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R157	1-216-854-11	METAL CHIP	560K	5%	1/16W	
R158	1-218-877-11	METAL CHIP	18K	0.50%	1/16W	
R159	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R160	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R161	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R164	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R165	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R167	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R169	1-218-720-11	METAL CHIP	15K	0.50%	1/16W	
R170	1-216-847-11	METAL CHIP	150K	5%	1/16W	
R171	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R172	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R174	1-218-720-11	METAL CHIP	15K	0.50%	1/16W	
R175	1-220-397-11	METAL GLAZE	4.7M	5%	1/16W	
R176	1-216-864-11	METAL CHIP	0	5%	1/16W	
R177	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R178	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R179	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R180	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R181	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R182	1-216-842-11	METAL CHIP	56K	5%	1/16W	
R183	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R184	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R185	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R186	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R188	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R189	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R190	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R191	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R192	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R193	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R194	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R196	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R197	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R198	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R199	1-216-817-11	METAL CHIP	470	5%	1/16W	
R200	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R201	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R202	1-216-807-11	METAL CHIP	68	5%	1/16W	
R203	1-216-807-11	METAL CHIP	68	5%	1/16W	
R204	1-216-807-11	METAL CHIP	68	5%	1/16W	
R208	1-216-864-11	METAL CHIP	0	5%	1/16W	
R210	1-216-845-11	METAL CHIP	100K	5%	1/16W	

Ref. No.	Part No.	Description	Remark
R211	1-218-732-11	METAL CHIP 47K 0.50% 1/16W	
R212	1-218-732-11	METAL CHIP 47K 0.50% 1/16W	
R213	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R214	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R215	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R219	1-216-864-11	METAL CHIP 0 5% 1/16W	
R220	1-216-864-11	METAL CHIP 0 5% 1/16W	
R221	1-216-864-11	METAL CHIP 0 5% 1/16W	
R222	1-216-864-11	METAL CHIP 0 5% 1/16W	
R223	1-216-864-11	METAL CHIP 0 5% 1/16W	
R224	1-216-864-11	METAL CHIP 0 5% 1/16W	
R225	1-216-864-11	METAL CHIP 0 5% 1/16W	
R226	1-216-864-11	METAL CHIP 0 5% 1/16W	
R227	1-216-864-11	METAL CHIP 0 5% 1/16W	
R228	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R229	1-216-864-11	METAL CHIP 0 5% 1/16W	
R243	1-216-849-11	METAL CHIP 220K 5% 1/16W	
		< VARIABLE RESISTOR >	
RV002	1-238-853-11	RES, ADJ, CERMET 1K	
RV101	1-223-733-21	RES, VAR, CARBON 10K (BRIGHT)	
		< SWITCH >	
S101	1-572-467-21	SWITCH, PUSH (1 KEY)(REVERSE)	
		< TRANSFORMER >	
⚠T001	1-427-915-11	TRANSFORMER, INVERTER	
T002	1-427-941-21	TRANSFORMER, CONVERTER	
		< OSCILLATOR >	
X101	1-579-661-21	OSCILLATOR, CRYSTAL (4.43MHz)	

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* A-7066-441-A PJ-70P BOARD, COMPLETE (TRV30E)
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* A-7066-460-A PJ-70P BOARD, COMPLETE (TRV50E/TRV70E)
****

		< CAPACITOR >	
C1506	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1507	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C1508	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1509	1-164-383-11	CERAMIC CHIP 110PF 5% 50V	
C1510	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C1511	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C1512	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C1514	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C1515	1-164-392-11	CERAMIC CHIP 390PF 5% 50V	
C1516	1-162-974-11	CERAMIC CHIP 0.01uF 50V	

Ref. No.	Part No.	Description	Remark
C1518	1-162-924-11	CERAMIC CHIP 56PF 5% 50V	
C1521	1-164-218-11	CERAMIC CHIP 180PF 0.25PF 50V	
		< CONNECTOR >	
* CN1502	1-573-334-11	CONNECTOR, BOARD TO BOARD 12P	
		< IC >	
IC1501	8-759-334-09	IC CXA2003N	
		< COIL >	
L1504	1-414-078-11	INDUCTOR 10uH	
		< TRANSISTOR >	
Q1506	8-729-402-42	TRANSISTOR UN5213	
		< RESISTOR >	
R1507	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1512	1-218-871-11	METAL CHIP 10K 0.50% 1/16W	
R1513	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1514	1-216-822-11	METAL CHIP 1.2K 5% 1/16W	
R1515	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1516	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1517	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1519	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R1520	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1521	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R1524	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1525	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R1536	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1549	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1550	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	

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* A-7072-236-A PK-40 BOARD, COMPLETE (TRV30E)
****
(Ref. No. 5,000 Series)

* A-7072-242-A PK-41 BOARD, COMPLETE (TRV50E/TRV70E)
****
(Ref. No. 6,000 Series)

		< CONNECTOR >	
CN591	1-764-707-21	CONNECTOR, FFC/FPC (LIF) 8P	
		< SWITCH >	
S591	1-692-111-11	SWITCH, KEY BOARD (FADER)	
S592	1-692-111-11	SWITCH, KEY BOARD (EDIT SEARCH -)	
S593	1-692-111-11	SWITCH, KEY BOARD (EDIT SEARCH +)	
S594	1-572-467-21	SWITCH, PUSH (1 KEY)(CAMERA)	
S595	1-572-467-21	SWITCH, PUSH (1 KEY)(VTR)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
**			
*	A-7072-235-A	SD-18 (MO) BOARD, COMPLETE (TRV30E)	
		**********************************	
		(Ref. No. 5,000 Series)	
		< CAPACITOR >	
C503	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C504	1-164-346-11	CERAMIC CHIP 1uF 16V	
C507	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C511	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C512	1-104-752-11	TANTAL. CHIP 33uF 20% 6.3V	
C513	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C514	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C515	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C516	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C517	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C518	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C519	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C522	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C523	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C525	1-135-210-11	TANTALUM CHIP 4.7uF 20% 10V	
		< CONNECTOR >	
* CN501	1-580-055-21	PIN, CONNECTOR 2P	
CN502	1-770-630-21	PIN, CONNECTOR 13P	
CN503	1-764-703-11	CONNECTOR, FFC/FPC (LIF) 4P	
CN504	1-766-344-21	CONNECTOR, FFC/FPC 14P	
CN505	1-766-353-21	CONNECTOR, FFC/FPC 23P	
CN506	1-764-707-21	CONNECTOR, FFC/FPC (LIF) 8P	
CN507	1-764-703-11	CONNECTOR, FFC/FPC (LIF) 4P	
* CN509	1-764-712-11	CONNECTOR, FFC/FPC (LIF) 13P	
CN510	1-766-759-11	CONNECTOR, FFC/FPC 4P	
CN511	1-770-626-21	PIN, CONNECTOR 9P	
		< DIODE >	
D506	8-719-404-49	DIODE MA111	
D507	8-719-404-49	DIODE MA111	
		< IC >	
IC501	8-759-265-99	IC NJM2073M(TE2)	
		< COIL >	
L501	1-412-060-11	INDUCTOR CHIP 22uH	
L502	1-412-979-21	INDUCTOR 1uH	
L503	1-412-979-21	INDUCTOR 1uH	
L504	1-412-979-21	INDUCTOR 1uH	
L505	1-412-979-21	INDUCTOR 1uH	
L506	1-412-979-21	INDUCTOR 1uH	
L507	1-412-979-21	INDUCTOR 1uH	
L508	1-412-979-21	INDUCTOR 1uH	
L509	1-412-979-21	INDUCTOR 1uH	
		< IC LINK >	
⚠PS501	1-576-122-21	LINK, IC (CCP2E10 0.4A)	
		< TRANSISTOR >	
Q501	8-729-024-39	TRANSISTOR 2SD1511-R/S(TX)	
Q509	8-729-402-42	TRANSISTOR UN5213	
Q510	8-729-015-60	TRANSISTOR 2SJ316-TD	
Q511	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q512	8-729-402-42	TRANSISTOR UN5213	
Q513	8-729-015-74	TRANSISTOR UN5111-TX	
Q514	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q515	8-729-025-60	TRANSISTOR 2SJ318-01STL	
Q516	8-729-015-76	TRANSISTOR UN5211-TX	
Q517	8-729-015-76	TRANSISTOR UN5211-TX	
Q518	8-729-015-76	TRANSISTOR UN5211-TX	
Q519	8-729-015-76	TRANSISTOR UN5211-TX	
Q520	8-729-015-74	TRANSISTOR UN5111-TX	
		< RESISTOR >	
R503	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R510	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R517	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R518	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R519	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R523	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R524	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R525	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R534	1-216-813-11	METAL CHIP 220 5% 1/16W	
R535	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R536	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R537	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R538	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R539	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R541	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R542	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R543	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R544	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R545	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R546	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R547	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R548	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R549	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	
R550	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R551	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R552	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R554	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	
R555	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R556	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description	Remark
R557	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R559	1-216-864-11	METAL CHIP 0 5% 1/16W	
R560	1-216-864-11	METAL CHIP 0 5% 1/16W	
R561	1-216-864-11	METAL CHIP 0 5% 1/16W	
R562	1-216-864-11	METAL CHIP 0 5% 1/16W	
R563	1-216-864-11	METAL CHIP 0 5% 1/16W	
R565	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R566	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R567	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R568	1-216-295-91	CONDUCTOR, CHIP (2012)	
R569	1-216-864-11	METAL CHIP 0 5% 1/16W	
R570	1-216-864-11	METAL CHIP 0 5% 1/16W	
R571	1-216-864-11	METAL CHIP 0 5% 1/16W	
R572	1-216-864-11	METAL CHIP 0 5% 1/16W	
R573	1-216-864-11	METAL CHIP 0 5% 1/16W	
R574	1-216-864-11	METAL CHIP 0 5% 1/16W	
R575	1-216-864-11	METAL CHIP 0 5% 1/16W	
R576	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R577	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R578	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R579	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R584	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R585	1-216-864-11	METAL CHIP 0 5% 1/16W	
R587	1-216-833-11	METAL CHIP 10K 5% 1/16W	

< VARIABLE RESISTOR >

Ref.No.	Part No.	Description	Remark
RV501	1-223-903-11	RES, VAR, CARBON 2K/2K (VOLUME)	

< SWITCH >

Ref.No.	Part No.	Description	Remark
S501	1-692-111-11	SWITCH, KEY BOARD (COUNTER RESET)	
S502	1-692-135-21	SWITCH, KEY BOARD (MENU)	
S503	1-692-111-11	SWITCH, KEY BOARD (DATE)	
S504	1-692-135-21	SWITCH, KEY BOARD (⇧)	
S505	1-692-088-41	SWITHC, TACTILE (PROGRAM AE)	
S506	1-692-135-21	SWITCH, KEY BOARD (⇩)	
S507	1-692-111-11	SWITCH, KEY BOARD (TIME)	
S508	1-692-088-41	SWITHC, TACTILE (BACK LIGHT)	
S510	1-692-135-21	SWITCH, KEY BOARD (EXECUTE)	
S511	1-692-088-41	SWITHC, TACTILE (PICTURE EFECT)	
S512	1-692-111-11	SWITCH, KEY BOARD (END SEARCH)	
S513	1-692-111-11	SWITCH, KEY BOARD (DISPLAY)	
SW501	1-692-280-11	SWITCH, PUSH (1 KEY)(PANEL OPEN)	

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Ref.No.	Part No.	Description	Remark
*	A-7072-241-A	SD-19 (ST) BOARD, COMPLETE (TRV50E/TRV70E)	

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(Ref. No. 6,000 Series)

< CAPACITOR >

Ref.No.	Part No.	Description	Remark
C501	1-104-752-11	TANTAL. CHIP 33uF 20% 6.3V	
C503	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C504	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C505	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C506	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C507	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C508	1-104-752-11	TANTAL. CHIP 33uF 20% 6.3V	
C509	1-104-752-11	TANTAL. CHIP 33uF 20% 6.3V	
C511	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C512	1-104-752-11	TANTAL. CHIP 33uF 20% 6.3V	
C513	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C514	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C515	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C516	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C517	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C518	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C519	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C521	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C523	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C525	1-135-210-11	TANTALUM CHIP 4.7uF 20% 10V	
C526	1-164-346-11	CERAMIC CHIP 1uF 16V	
C527	1-164-346-11	CERAMIC CHIP 1uF 16V	

< CONNECTOR >

Ref.No.	Part No.	Description	Remark
* CN501	1-580-055-21	PIN, CONNECTOR 2P	
CN502	1-770-630-21	PIN, CONNECTOR 13P	
CN503	1-764-703-11	CONNECTOR, FFC/FPC (LIF) 4P	
CN504	1-766-344-21	CONNECTOR, FFC/FPC 14P	
CN505	1-766-353-21	CONNECTOR, FFC/FPC 23P	
CN506	1-764-707-21	CONNECTOR, FFC/FPC (LIF) 8P	
CN507	1-764-703-11	CONNECTOR, FFC/FPC (LIF) 4P	
CN508	1-764-705-21	CONNECTOR, FFC/FPC (LIF) 6P	
* CN509	1-764-712-11	CONNECTOR, FFC/FPC (LIF) 13P	
CN510	1-766-759-11	CONNECTOR, FFC/FPC 4P	
CN511	1-770-626-21	PIN, CONNECTOR 9P	

< DIODE >

Ref.No.	Part No.	Description	Remark
D501	8-719-404-49	DIODE MA111	
D503	8-719-404-49	DIODE MA111	
D506	8-719-404-49	DIODE MA111	
D507	8-719-404-49	DIODE MA111	

< IC >

Ref.No.	Part No.	Description	Remark
IC501	8-759-701-02	IC NJM2073M	

Ref. No.	Part No.	Description				Remark
IC502	8-759-981-82	IC RC3414M				
		< COIL >				
L501	1-412-060-11	INDUCTOR CHIP 22uH				
L502	1-412-979-21	INDUCTOR CHIP 1uH				
L503	1-412-979-21	INDUCTOR CHIP 1uH				
L504	1-412-979-21	INDUCTOR CHIP 1uH				
L505	1-412-979-21	INDUCTOR CHIP 1uH				
L506	1-412-979-21	INDUCTOR CHIP 1uH				
L507	1-412-979-21	INDUCTOR CHIP 1uH				
L508	1-412-979-21	INDUCTOR CHIP 1uH				
L509	1-412-979-21	INDUCTOR CHIP 1uH				
		< IC LINK >				
⚠PS501	1-576-122-21	LINK, IC (CCP2E10 0.4A)				
		< TRANSISTOR >				
Q501	8-729-024-39	TRANSISTOR	2SD1511-R/S(TX)			
Q503	8-729-230-63	TRANSISTOR	2SC4116-YG			
Q504	8-729-230-60	TRANSISTOR	2SA1586-YG			
Q505	8-729-230-60	TRANSISTOR	2SA1586-YG			
Q506	8-729-402-42	TRANSISTOR	UN5213			
Q507	8-729-230-60	TRANSISTOR	2SA1586-YG			
Q508	8-729-230-63	TRANSISTOR	2SC4116-YG			
Q509	8-729-402-42	TRANSISTOR	UN5213			
Q510	8-729-015-60	TRANSISTOR	2SJ316-TD			
Q511	8-729-230-60	TRANSISTOR	2SA1586-YG			
Q512	8-729-402-42	TRANSISTOR	UN5213			
Q513	8-729-015-74	TRANSISTOR	UN5111-TX			
Q515	8-729-025-60	TRANSISTOR	2SJ318-01STL			
Q516	8-729-015-76	TRANSISTOR	UN5211-TX			
Q517	8-729-015-76	TRANSISTOR	UN5211-TX			
Q518	8-729-015-76	TRANSISTOR	UN5211-TX			
Q519	8-729-015-76	TRANSISTOR	UN5211-TX			
Q520	8-729-015-74	TRANSISTOR	UN5111-TX			
		< RESISTOR >				
R503	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R505	1-216-805-11	METAL CHIP	47	5%	1/16W	
R506	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R507	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R508	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R510	1-216-298-00	METAL CHIP	2.2	5%	1/10W	
R512	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R513	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R514	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R515	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R516	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R519	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R520	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R521	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R522	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R523	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R526	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R527	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R529	1-216-805-11	METAL CHIP	47	5%	1/16W	
R530	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R531	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R532	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R533	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R534	1-216-813-11	METAL CHIP	220	5%	1/16W	
R535	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R536	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R537	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R538	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R539	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R540	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R541	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R542	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R543	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R544	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R545	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R546	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R547	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R548	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R549	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R550	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R551	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R552	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R553	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R554	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R555	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R556	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R557	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R558	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R559	1-216-864-11	METAL CHIP	0	5%	1/16W	
R560	1-216-864-11	METAL CHIP	0	5%	1/16W	
R564	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R565	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R566	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R567	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R568	1-216-295-91	CONDUCTOR, CHIP (2012)				
R569	1-216-864-11	METAL CHIP	0	5%	1/16W	
R570	1-216-864-11	METAL CHIP	0	5%	1/16W	
R571	1-216-864-11	METAL CHIP	0	5%	1/16W	
R572	1-216-864-11	METAL CHIP	0	5%	1/16W	
R573	1-216-864-11	METAL CHIP	0	5%	1/16W	
R574	1-216-864-11	METAL CHIP	0	5%	1/16W	
R575	1-216-864-11	METAL CHIP	0	5%	1/16W	
R576	1-216-837-11	METAL CHIP	22K	5%	1/16W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
R577	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R578	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R579	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R580	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R581	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R584	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R585	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R586	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R587	1-216-833-11	METAL CHIP 10K 5% 1/16W	
		< VARIABLE RESISTOR >	
RV501	1-223-903-11	RES, VAR, CARBON 2K/2K (VOLUME)	
		< SWITCH >	
S501	1-692-111-11	SWITCH, KEY BOARD (COUNTER RESET)	
S502	1-692-111-11	SWITCH, KEY BOARD (MENU)	
S503	1-692-111-11	SWITCH, KEY BOARD (DATE)	
S504	1-692-111-11	SWITCH, KEY BOARD (⇧)	
S505	1-692-088-41	SWITCH, TACTILE (PROGRAM AE)	
S506	1-692-111-11	SWITCH, KEY BOARD (⇩)	
S507	1-692-111-11	SWITCH, KEY BOARD (TIME)	
S508	1-692-088-41	SWITCH, TACTILE (BACK LIGHT)	
S509	1-572-497-21	SWITCH, SLIDE (STEADY SHOT)	
S510	1-692-111-11	SWITCH, KEY BOARD (EXECUTE)	
S511	1-692-088-41	SWITCH, TACTILE (PICTURE EFECT)	
S512	1-692-111-11	SWITCH, KEY BOARD (END SEARCH)	
S513	1-692-111-11	SWITCH, KEY BOARD (DISPLAY)	
		< SWITCH >	
SW501	1-692-280-11	SWITCH, PUSH (1 KEY)(PANEL OPEN)	

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Ref. No.	Part No.	Description	Remark
*	A-7072-283-A	SL-38 (FD) BOARD, COMPLETE ************************** (Ref. No. 2,000 Series)	
		< CAPACITOR >	
C543	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C544	1-135-211-11	TANTAL. CHIP 6.8uF 20% 6.3V	
C545	1-135-211-11	TANTAL. CHIP 6.8uF 20% 6.3V	
C546	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C547	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C551	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C553	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C554	1-135-215-21	TANTAL. CHIP 6.8uF 20% 16V	
C555	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C556	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C557	1-135-149-21	TANTALUM CHIP 2.2uF 20% 10V	
C558	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CN500	1-691-473-21	CONNECTOR, FFC/FPC 7P	
CN501	1-691-472-21	CONNECTOR, FFC/FPC 6P	
CN502	1-691-482-21	CONNECTOR, FFC/FPC 15P	
		< IC >	
IC507	8-759-165-47	IC MPC1780VFUEB	
		< COIL >	
L505	1-414-078-11	INDUCTOR 10uH	
		< TRANSISTOR >	
Q560	8-729-805-25	TRANSISTOR 2SB1121	
Q561	8-729-425-50	TRANSISTOR 2SB1462Q	
Q562	8-729-402-81	TRANSISTOR XN4501	
		< RESISTOR >	
R562	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R563	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R564	1-216-864-11	METAL CHIP 0 5% 1/16W	
R565	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R566	1-218-857-11	METAL CHIP 2.7K 0.50% 1/16W	
R567	1-216-295-91	CONDUCTOR, CHIP (2012)	
R568	1-216-168-00	METAL GLAZE 56 5% 1/8W	
R569	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R570	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R571	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R572	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R590	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R591	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	
		< FLEXIBLE BOARD >	
W500	1-651-889-11	FP-48 FLEXIBLE BOARD	
W501	1-642-186-11	FP-437 FLEXIBLE BOARD	

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Ref. No.	Part No.	Description	Remark
*	A-7066-440-A	VC-163P (L) BOARD, COMPLETE (TRV30E) ************************************	
*	A-7066-459-A	VC-163P (H) BOARD, COMPLETE (TRV50E/TRV70E) **************************	
		< CAPACITOR >	
C604	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C605	1-135-181-21	TANTALUM CHIP 4.7uF 20% 6.3V	
C606	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C607	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C609	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	

VC-163

Ref. No.	Part No.	Description				Remark
C610	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C612	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C616	1-135-091-91	TANTAL. CHIP	1uF	20%	16V	
C617	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C618	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C619	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C620	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C621	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C622	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C623	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C624	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C628	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C629	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C630	1-162-920-11	CERAMIC CHIP	27PF	5%	50V	
C631	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V	
C632	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C633	1-162-920-11	CERAMIC CHIP	27PF	5%	50V	(TRV50E/TRV70E)
C633	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	(TRV30E)
C634	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V	
C635	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	(TRV50E/TRV70E)
C636	1-164-360-11	CERAMIC CHIP	0.1uF		16V	(TRV50E/TRV70E)
C637	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C638	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C639	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V	
C641	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	(TRV50E/TRV70E)
C642	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	(TRV50E/TRV70E)
C644	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C645	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C646	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C647	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C691	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	
C699	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	
C701	1-163-059-91	CERAMIC CHIP	0.01uF	10%	50V	
C702	1-162-638-11	CERAMIC CHIP	1uF		16V	
C703	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C704	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C705	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V	
C706	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C708	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C709	1-135-214-21	TANTAL. CHIP	4.7uF	20%	20V	
C710	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C711	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C712	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C713	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V	
C714	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C715	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C716	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C717	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C718	1-162-637-11	CERAMIC CHIP	0.47uF		16V	
C719	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C720	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C721	1-162-916-11	CERAMIC CHIP	12PF	5%	50V	
C722	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V	
C724	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	(TRV50E/TRV70E)
C724	1-162-925-11	CERAMIC CHIP	68PF	5%	50V	(TRV30E)
C725	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C726	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C727	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C728	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C729	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C730	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	
C731	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V	
C732	1-162-638-11	CERAMIC CHIP	1uF		16V	
C733	1-162-638-11	CERAMIC CHIP	1uF		16V	
C734	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V	
C735	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C741	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V	
C742	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C743	1-163-059-91	CERAMIC CHIP	0.01uF	10%	50V	
C744	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C745	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C746	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C747	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C748	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C749	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V	
C750	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C751	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C752	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C753	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C754	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C755	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C756	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V	
C757	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C771	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V	(TRV50E/TRV70E)
C772	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	(TRV50E/TRV70E)
C773	1-164-299-11	CERAMIC CHIP	0.22uF	10%	25V	(TRV50E/TRV70E)
C774	1-128-257-21	ELECT CHIP	33uF	20%	10V	(TRV50E/TRV70E)
C775	1-128-257-21	ELECT CHIP	33uF	20%	10V	(TRV50E/TRV70E)
C776	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	(TRV50E/TRV70E)
C777	1-162-568-11	CERAMIC CHIP	0.33uF	10%	16V	(TRV50E/TRV70E)

Ref. No.	Part No.	Description	Remark
C778	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	(TRV50E/TRV70E)
C779	1-162-568-11	CERAMIC CHIP 0.33uF 10% 16V	(TRV50E/TRV70E)
C780	1-164-360-11	CERAMIC CHIP 0.1uF 16V	(TRV50E/TRV70E)
C781	1-162-974-11	CERAMIC CHIP 0.01uF 50V	(TRV50E/TRV70E)
C782	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	(TRV50E/TRV70E)
C783	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	(TRV50E/TRV70E)
C784	1-162-974-11	CERAMIC CHIP 0.01uF 50V	(TRV50E/TRV70E)
C785	1-162-974-11	CERAMIC CHIP 0.01uF 50V	(TRV50E/TRV70E)
C786	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	(TRV50E/TRV70E)
C788	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	(TRV50E/TRV70E)
C789	1-164-245-11	CERAMIC CHIP 0.015uF 10% 25V	(TRV50E/TRV70E)
C790	1-164-299-11	CERAMIC CHIP 0.22uF 10% 25V	(TRV50E/TRV70E)
C793	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	(TRV50E/TRV70E)
C794	1-164-360-11	CERAMIC CHIP 0.1uF 16V	(TRV50E/TRV70E)

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
* CN601	1-764-395-21	CONNECTOR, BOARD TO BOARD 42P	
CN701	1-750-630-11	CONNECTOR, FFC/FPC (ZIF) 16P	
CN751	1-764-528-11	CONNECTOR, FFC/FPC (ZIF) 21P	
CN775	1-691-487-21	CONNECTOR, FFC/FPC 8P (TRV50E/TRV70E)	

< TRIMMER >

Ref. No.	Part No.	Description	Remark
CT701	1-141-356-11	CAP, ADJ	

< DIODE >

Ref. No.	Part No.	Description	Remark
D601	8-719-404-46	DIODE MA110 (TRV50E/TRV70E)	
D701	8-719-404-46	DIODE MA110	
D702	8-719-404-46	DIODE MA110	
D703	8-719-404-46	DIODE MA110	
D705	8-719-404-46	DIODE MA110	

< FILTER >

Ref. No.	Part No.	Description	Remark
FL601	1-239-352-11	FILTER, LOW PASS (TRV50E/TRV70E)	
FL601	1-239-766-11	FILTER, LOW PASS (TRV30E)	

< IC >

Ref. No.	Part No.	Description	Remark
IC601	8-759-276-29	IC XL9020F-E2	
IC602	8-759-344-95	IC SC424618-MC68HC11MA8FU	
IC603	8-759-064-36	IC MB88346BPFV	
IC609	8-752-375-10	IC CXD2150BR	
IC610	8-752-365-72	IC CXD2151R	
IC611	8-759-262-36	IC CXD2133BR	
IC613	8-759-297-76	IC CXD2152AREL (TRV50E/TRV70E)	
IC614	8-759-328-91	IC uPD6461GS-811-GLG-E2	
IC701	8-752-355-07	IC CXD1267N	
IC702	8-752-374-25	IC CXD2415R	
IC703	8-752-073-11	IC CXA2006Q	
IC704	8-752-376-06	IC CXD2311AR	
IC705	8-752-373-69	IC CXD2407BR	
IC751	8-759-701-24	IC NJM3414M	
IC752	8-759-058-50	IC BA10324AF-E2	
IC752	8-759-100-95	IC uPC324G2	
IC753	8-752-365-65	IC CXD2126N	
IC754	8-759-247-07	IC MPC17A34VMEL	
IC755	8-759-209-15	IC TC4SU69F	
IC772	8-759-234-77	IC TC4S66F (TRV50E/TRV70E)	
IC773	8-759-234-77	IC TC4S66F (TRV50E/TRV70E)	
IC774	8-759-058-45	IC NJM3403AV(TE2)(TRV50E/TRV70E)	
IC775	8-759-080-34	IC TA75W01FU-TE12R (TRV50E/TRV70E)	
IC776	8-759-248-78	IC MB88102PFV-G-BND-ER (TRV50E/TRV70E)	
IC778	8-752-865-22	IC CXP81120-003R (TRV50E/TRV70E)	

< COIL >

Ref. No.	Part No.	Description	Remark
L601	1-412-058-11	INDUCTOR CHIP 10uH	
L602	1-414-078-11	INDUCTOR 10uH	
L603	1-412-058-11	INDUCTOR CHIP 10uH	
L604	1-414-078-11	INDUCTOR 10uH	
L605	1-410-389-31	INDUCTOR CHIP 47uH	
L606	1-414-078-11	INDUCTOR 10uH	
L607	1-414-078-11	INDUCTOR 10uH (TRV50E/TRV70E)	
L608	1-412-006-31	INDUCTOR CHIP 10uH	
L609	1-412-979-21	INDUCTOR 1uH	
L610	1-412-979-21	INDUCTOR 1uH	
L611	1-414-230-11	INDUCTOR, FERRITE BEAD	
L612	1-414-230-11	INDUCTOR, FERRITE BEAD	
L614	1-414-230-11	INDUCTOR, FERRITE BEAD	
L702	1-412-058-11	INDUCTOR CHIP 10uH	
L703	1-412-058-11	INDUCTOR CHIP 10uH	
L704	1-412-058-11	INDUCTOR CHIP 10uH	
L705	1-412-058-11	INDUCTOR CHIP 10uH	
L706	1-412-058-11	INDUCTOR CHIP 10uH	
L751	1-412-062-11	INDUCTOR CHIP 47uH	
L752	1-412-058-11	INDUCTOR CHIP 10uH	
L753	1-412-058-11	INDUCTOR CHIP 10uH	
L775	1-412-058-11	INDUCTOR CHIP 10uH (TRV50E/TRV70E)	
L777	1-414-078-11	INDUCTOR 10uH (TRV50E/TRV70E)	
L778	1-414-078-11	INDUCTOR 10uH	

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q604	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q605	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q606	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q607	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q701	8-729-403-27	TRANSISTOR XN4401	
Q751	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q752	8-729-015-76	TRANSISTOR UN5211-TX	
		< RESISTOR >	
R601	1-216-851-11	METAL CHIP 330K 5% 1/16W	
R602	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R603	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R604	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R608	1-216-864-11	METAL CHIP 0 5% 1/16W	
R612	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R613	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R614	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R615	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R617	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R619	1-216-803-11	METAL CHIP 33 5% 1/16W	
R620	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R621	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R622	1-216-864-11	METAL CHIP 0 5% 1/16W	
R623	1-216-863-11	METAL GLAZE 3.3M 5% 1/16W	
R624	1-216-864-11	METAL CHIP 0 5% 1/16W	
R625	1-216-844-11	METAL CHIP 82K 5% 1/16W	
R626	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R627	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R628	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R629	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R630	1-216-864-11	METAL CHIP 0 5% 1/16W	
R631	1-216-864-11	METAL CHIP 0 5% 1/16W	
R634	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R635	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R636	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R637	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R638	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R639	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R640	1-216-815-11	METAL CHIP 330 5% 1/16W	
R641	1-216-864-11	METAL CHIP 0 5% 1/16W	
R643	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R644	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV30E)
R645	1-216-834-11	METAL CHIP 12K 5% 1/16W	
R646	1-216-818-11	METAL CHIP 560 5% 1/16W	
R647	1-216-834-11	METAL CHIP 12K 5% 1/16W	
R648	1-216-818-11	METAL CHIP 560 5% 1/16W	
R649	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R650	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R651	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R652	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R653	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV30E)
R654	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV50E/TRV70E)
R656	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV30E)
R657	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV50E/TRV70E)
R658	1-216-864-11	METAL CHIP 0 5% 1/16W	
R659	1-216-817-11	METAL CHIP 470 5% 1/16W	
R661	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R662	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R663	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R664	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R665	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R666	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R667	1-216-820-11	METAL CHIP 820 5% 1/16W	
R668	1-216-824-11	METAL CHIP 1.8K 5% 1/16W	
R701	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R702	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R703	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R705	1-216-824-11	METAL CHIP 1.8K 5% 1/16W	
R708	1-216-864-11	METAL CHIP 0 5% 1/16W	
R709	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R711	1-216-864-11	METAL CHIP 0 5% 1/16W	
R713	1-216-803-11	METAL CHIP 33 5% 1/16W	
R714	1-216-864-11	METAL CHIP 0 5% 1/16W	
R715	1-216-864-11	METAL CHIP 0 5% 1/16W	
R716	1-218-847-11	METAL CHIP 1K 0.50% 1/16W	
R717	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV50E/TRV70E)
R718	1-216-803-11	METAL CHIP 33 5% 1/16W	
R719	1-218-876-11	METAL CHIP 16K 0.50% 1/16W	
R721	1-216-864-11	METAL CHIP 0 5% 1/16W	
R722	1-216-864-11	METAL CHIP 0 5% 1/16W	
R723	1-216-864-11	METAL CHIP 0 5% 1/16W	
R725	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R726	1-216-864-11	METAL CHIP 0 5% 1/16W	
R727	1-216-864-11	METAL CHIP 0 5% 1/16W	
R728	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	(TRV30E)
R728	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV50E/TRV70E)
R740	1-216-864-11	METAL CHIP 0 5% 1/16W	
R741	1-218-855-11	METAL CHIP 2.2K 0.50% 1/16W	
R742	1-218-865-11	METAL CHIP 5.6K 0.50% 1/16W	
R743	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R744	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R745	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R746	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R747	1-216-820-11	METAL CHIP 820 5% 1/16W	
R748	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R749	1-216-851-11	METAL CHIP 330K 5% 1/16W	

Ref. No.	Part No.	Description	Remark
R750	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R751	1-216-809-11	METAL CHIP 100 5% 1/16W	
R752	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R753	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R754	1-216-848-11	METAL CHIP 180K 5% 1/16W	
R755	1-216-855-11	METAL CHIP 680K 5% 1/16W	
R756	1-216-848-11	METAL CHIP 180K 5% 1/16W	
R757	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R758	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R759	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R760	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R761	1-216-842-11	METAL CHIP 56K 5% 1/16W	
R762	1-216-842-11	METAL CHIP 56K 5% 1/16W	
R764	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	(TRV50E/TRV70E)
R764	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV30E)
R765	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV70E)
R766	1-216-835-11	METAL CHIP 15K 5% 1/16W	(TRV50E/TRV70E)
R767	1-216-850-11	METAL CHIP 270K 5% 1/16W	(TRV50E/TRV70E)
R768	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV70E)
R769	1-216-850-11	METAL CHIP 270K 5% 1/16W	(TRV50E/TRV70E)
R770	1-216-835-11	METAL CHIP 15K 5% 1/16W	(TRV50E/TRV70E)
R771	1-216-803-11	METAL CHIP 33 5% 1/16W	(TRV50E/TRV70E)
R772	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV50E/TRV70E)
R773	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV50E/TRV70E)
R774	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV50E/TRV70E)
R775	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV50E/TRV70E)
R776	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV50E/TRV70E)
R777	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV50E/TRV70E)
R778	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV70E)
R779	1-218-911-11	METAL CHIP 470K 0.50% 1/16W	(TRV50E/TRV70E)
R780	1-218-911-11	METAL CHIP 470K 0.50% 1/16W	(TRV50E/TRV70E)
R781	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV70E)
R782	1-218-911-11	METAL CHIP 470K 0.50% 1/16W	(TRV50E/TRV70E)
R783	1-218-911-11	METAL CHIP 470K 0.50% 1/16W	(TRV50E/TRV70E)
R784	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV30E)
R786	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV50E/TRV70E)
R787	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV50E/TRV70E)
R788	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV50E/TRV70E)
R789	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV50E/TRV70E)
R790	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV70E)
R792	1-216-857-11	METAL CHIP 1M 5% 1/16W	(TRV50E/TRV70E)
R793	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV50E/TRV70E)

< VIBRATOR >

Ref. No.	Part No.	Description	Remark
X601	1-760-081-21	VIBRATOR, CERAMIC (24MHz)	
X701	1-760-321-11	VIBRATOR, CRYSTAL (28.375MHz)	
X775	1-579-553-11	VIBRATOR (12MHz)	(TRV50E/TRV70E)

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* A-7066-442-A VF-82P BOARD, COMPLETE (TRV30E)

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(Ref. No. 3,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description				Remark
C901	1-124-635-00	ELECT	220uF	20%	6.3V	
C902	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C903	1-135-091-91	TANTAL. CHIP	1uF	20%	16V	
C904	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V	
C905	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V	
C906	1-162-638-11	CERAMIC CHIP	1uF		16V	
C907	1-137-306-11	FILM CHIP	0.1uF	5%	16V	
C908	1-163-103-00	CERAMIC CHIP	27PF	5%	50V	
C909	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
⚠C910	1-164-758-11	CERAMIC CHIP	0.0039uF	5%	50V	
⚠C911	1-164-715-11	CERAMIC CHIP	0.0068uF	5%	50V	
C912	1-127-532-11	ELECT(SOLID)	47uF	20%	6.3V	
C913	1-124-577-11	ELECT	82uF	20%	10V	
C914	1-107-689-21	TANTAL. CHIP	1uF	20%	35V	
C915	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C916	1-164-611-11	CERAMIC CHIP	0.001uF	10%	500V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN901	1-764-703-11	CONNECTOR, FFC/FPC (LIF) 4P	
CN902	1-573-290-21	PIN, CONNECTOR (1.5MM) (SMD) 4P	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D901	8-719-989-22	DIODE CL-150R-CD	
D903	8-719-400-20	DIODE MA152WA	
		< IC >	
IC901	8-759-196-14	IC BA7149F-E2	
		< COIL >	
L901	1-412-031-11	INDUCTOR CHIP 47uH	
L902	1-410-387-11	INDUCTOR CHIP 33uH	
⚠L903	1-402-680-21	COIL, FERRITE (HCL)	
		< TRANSISTOR >	
Q902	8-729-106-68	TRANSISTOR 2SD1615A-GP	
Q903	8-729-216-31	TRANSISTOR 2SA1163-G	
Q904	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		< RESISTOR >	
R901	1-216-041-00	METAL CHIP 470 5% 1/10W	
R902	1-216-041-00	METAL CHIP 470 5% 1/10W	
R903	1-216-035-00	METAL CHIP 270 5% 1/10W	
R907	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R908	1-216-111-00	METAL CHIP 390K 5% 1/10W	
R909	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R910	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R911	1-216-160-00	METAL GLAZE 27 5% 1/8W	
R912	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R913	1-216-047-00	METAL CHIP 820 5% 1/10W	
R914	1-216-033-00	METAL CHIP 220 5% 1/10W	
R915	1-216-308-00	METAL CHIP 4.7 5% 1/10W	
R917	1-208-813-11	METAL GLAZE 20K 0.50% 1/10W	
R918	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R919	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R920	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R921	1-216-311-00	METAL CHIP 6.8 5% 1/10W	
R922	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R923	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R924	1-216-131-11	METAL CHIP 2.7M 5% 1/10W	
R925	1-216-131-11	METAL CHIP 2.7M 5% 1/10W	
R926	1-216-295-91	CONDUCTOR, CHIP (2012)	
R927	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R928	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R929	1-216-043-91	METAL GLAZE 560 5% 1/10W	
		< VARIABLE RESISTOR >	
RV903	1-238-852-11	RES, ADJ, CERMET 470	
RV904	1-223-566-11	RES, ADJ, METAL GLAZE 1M	

Ref. No.	Part No.	Description	Remark
		< TRANSFORMER >	
⚠T901	1-453-124-11	TRANSFORMER ASSY, FLYBACK	
		< THERMISTOR >	
TH901	1-809-350-21	THERMISTOR, NTC (2125)	
		< SOCKET >	
W901	1-540-019-21	SOCKET ASSY, CRT	

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* A-7066-462-A VF-85P BOARD, COMPLETE (TRV50E/TRV70E)

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(Ref. No. 4,000 Series)

Ref. No.	Part No.	Description	Remark
		< CAPACITOR >	
C901	1-124-635-00	ELECT 220uF 20% 6.3V	
C902	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
C903	1-135-091-91	TANTAL. CHIP 1uF 20% 16V	
C904	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V	
C905	1-104-752-11	TANTAL. CHIP 33uF 20% 6.3V	
C906	1-162-638-11	CERAMIC CHIP 1uF 16V	
C907	1-137-306-11	FILM CHIP 0.1uF 5% 16V	
C908	1-163-103-00	CERAMIC CHIP 27PF 5% 50V	
C909	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
⚠C910	1-164-758-11	CERAMIC CHIP 0.0039uF 5% 50V	
⚠C911	1-164-715-11	CERAMIC CHIP 0.0068uF 5% 50V	
C912	1-127-532-11	ELECT(SOLID) 47uF 20% 6.3V	
C913	1-124-577-11	ELECT 82uF 20% 10V	
C914	1-107-689-21	TANTAL. CHIP 1uF 20% 35V	
C915	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C916	1-164-611-11	CERAMIC CHIP 0.001uF 10% 500V	
		< CONNECTOR >	
CN901	1-764-703-11	CONNECTOR, FFC/FPC (LIF) 4P	
CN902	1-573-290-21	PIN, CONNECTOR (1.5MM) (SMD) 4P	
		< DIODE >	
D901	8-719-404-19	DIODE LN1251C	
D903	8-719-400-20	DIODE MA152WA	
		< IC >	
IC901	8-759-196-14	IC BA7149F-E2	
		< COIL >	
L901	1-412-031-11	INDUCTOR CHIP 47uH	
L902	1-410-387-11	INDUCTOR CHIP 33uH	
⚠L903	1-402-680-21	COIL, FERRITE (HCL)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q902	8-729-106-68	TRANSISTOR 2SD1615A-GP	
Q903	8-729-216-31	TRANSISTOR 2SA1163-G	
Q904	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		< RESISTOR >	
R901	1-216-817-11	METAL CHIP 470 5% 1/16W	
R902	1-216-817-11	METAL CHIP 470 5% 1/16W	
R903	1-216-814-11	METAL CHIP 270 5% 1/16W	
R907	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R908	1-216-852-11	METAL CHIP 390K 5% 1/16W	
R909	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R910	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R911	1-216-160-00	METAL GLAZE 27 5% 1/8W	
R912	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R913	1-216-820-11	METAL CHIP 820 5% 1/16W	
R914	1-216-813-11	METAL CHIP 220 5% 1/16W	
R915	1-216-793-11	METAL GLAZE 4.7 5% 1/16W	
R917	1-218-878-11	METAL CHIP 20K 0.50% 1/16W	
R918	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R919	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R920	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R921	1-216-795-11	METAL GLAZE 6.8 5% 1/16W	
R922	1-216-847-11	METAL CHIP 150K 5% 1/16W	
R923	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R924	1-216-862-11	METAL GLAZE 2.7M 5% 1/16W	
R925	1-216-862-11	METAL GLAZE 2.7M 5% 1/16W	
R926	1-216-864-11	METAL CHIP 0 5% 1/16W	
R927	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R928	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R929	1-216-818-11	METAL CHIP 560 5% 1/16W	
		< VARIABLE RESISTOR >	
RV903	1-238-219-11	RES, ADJ, METAL 470	
RV904	1-238-561-11	RES, ADJ, METAL GLAZE 1M	
		< TRANSFORMER >	
⚠T901	1-453-124-11	TRANSFORMER ASSY, FLYBACK	
		< THERMISTOR >	
TH901	1-809-350-21	THERMISTOR, NTC (2125)	
		< SOCKET >	
W901	1-540-019-21	SOCKET ASSY, CRT	

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Ref.No.	Part No.	Description	Remark
*	A-7066-438-A	VS-126P (L) BOARD, COMPLETE	(TRV30E:AUS, E, HK)
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*	A-7066-457-A	VS-126P (H) BOARD, COMPLETE	(TRV70E:AUS, E, HK)
		***************************	
*	A-7066-497-A	VS-126P (M) BOARD, COMPLETE	(TRV50E)
		***********************************	
*	A-7066-527-A	VS-126P (L) BOARD, COMPLETE	(TRV30E:AEP, UK)
		***************************	
*	A-7085-023-A	VS-126P (H) BOARD, COMPLETE	(TRV70E:AEP, UK)
		***************************	
		< CAPACITOR >	
C101	1-162-921-11	CERAMIC CHIP 33PF 5% 50V	(TRV30E/TRV50E)
C102	1-162-911-11	CERAMIC CHIP 6PF 0.5PF 50V	(TRV70E)
C102	1-162-922-11	CERAMIC CHIP 39PF 5% 50V	(TRV30E/TRV50E)
C103	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C104	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C106	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C107	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C108	1-162-926-11	CERAMIC CHIP 82PF 5% 50V	
C109	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C110	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C111	1-162-974-11	CERAMIC CHIP 0.01uF 50V	(TRV30E)
C112	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C113	1-164-217-11	CERAMIC CHIP 150PF 5% 50V	
C114	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C115	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C116	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C117	1-104-852-11	TANTAL. CHIP 22uF 20% 6.3V	
C118	1-104-852-11	TANTAL. CHIP 22uF 20% 6.3V	
C119	1-162-961-11	CERAMIC CHIP 330PF 10% 50V	
C120	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C121	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C122	1-162-961-11	CERAMIC CHIP 330PF 10% 50V	
C123	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C124	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C128	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C131	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C134	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C135	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C136	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C137	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C143	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
C145	1-104-852-11	TANTAL. CHIP 22uF 20% 6.3V	
C146	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C147	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C148	1-162-958-11	CERAMIC CHIP 270PF 5% 50V	
C149	1-162-974-11	CERAMIC CHIP 0.01uF 50V	(TRV30E/TRV50E)
C150	1-162-974-11	CERAMIC CHIP 0.01uF 50V	(TRV30E/TRV50E)
C151	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	(TRV30E/TRV50E)
C152	1-162-974-11	CERAMIC CHIP 0.01uF 50V	(TRV30E/TRV50E)
C153	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C154	1-162-917-11	CERAMIC CHIP 15PF 5% 50V	(TRV30E/TRV50E)
C155	1-162-974-11	CERAMIC CHIP 0.01uF 50V	(TRV70E)
C156	1-162-910-11	CERAMIC CHIP 5PF 0.25PF 50V	(TRV30E/TRV50E)
C157	1-162-916-11	CERAMIC CHIP 12PF 5% 50V	
C158	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	(TRV30E/TRV50E)
C159	1-162-922-11	CERAMIC CHIP 39PF 5% 50V	(TRV30E/TRV50E)
C160	1-162-920-11	CERAMIC CHIP 27PF 5% 50V	(TRV30E/TRV50E)
C161	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C162	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	(TRV30E/TRV50E)
C163	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	(TRV30E/TRV50E)
C164	1-162-916-11	CERAMIC CHIP 12PF 5% 50V	(TRV30E/TRV50E)
C165	1-164-218-11	CERAMIC CHIP 180PF 0.25PF 50V	(TRV30E/TRV50E)
C166	1-162-958-11	CERAMIC CHIP 270PF 5% 50V	
C167	1-164-382-11	CERAMIC CHIP 91PF 5% 50V	(TRV30E/TRV50E)
C168	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	(TRV30E/TRV50E)
C169	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	(TRV30E/TRV50E)
C170	1-162-915-11	CERAMIC CHIP 10PF 0.5PF50V	(TRV70E)
C171	1-162-920-11	CERAMIC CHIP 27PF 5% 50V	(TRV70E)
C172	1-162-921-11	CERAMIC CHIP 33PF 5% 50V	(TRV30E/TRV50E)
C173	1-164-155-11	CERAMIC CHIP 75PF 5% 50V	(TRV70E)
C175	1-162-910-11	CERAMIC CHIP 5PF 0.25PF 50V	(TRV70E)
C176	1-162-922-11	CERAMIC CHIP 39PF 5% 50V	(TRV70E)
C177	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C178	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C179	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C190	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C202	1-162-915-11	CERAMIC CHIP 10PF 0.5PF 50V	(TRV70E)
C203	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C204	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C206	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C207	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C208	1-135-149-21	TANTALUM CHIP 2.2uF 20% 10V	
C209	1-126-246-11	ELECT CHIP 220uF 20% 4V	
C210	1-164-245-11	CERAMIC CHIP 0.015uF 10% 25V	
C211	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C212	1-162-995-11	CERAMIC CHIP 0.022uF 50V	
C213	1-135-176-21	TANTALUM CHIP 0.68uF 10% 20V	
C214	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C215	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C216	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C217	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C218	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C220	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C221	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C222	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C223	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C227	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C228	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C229	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C230	1-135-180-21	TANTALUM CHIP 3.3uF 20% 6.3V	
C231	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C234	1-162-957-11	CERAMIC CHIP 220PF 5% 50V	
C235	1-126-207-11	ELECT CHIP 33uF 20% 4V	
C237	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C238	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C239	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C240	1-164-392-11	CERAMIC CHIP 390PF 5% 50V	
C241	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C242	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C243	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C244	1-162-959-11	CERAMIC CHIP 330PF 5% 50V	
C245	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C247	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C248	1-164-217-11	CERAMIC CHIP 150PF 5% 50V	(TRV70E)
C250	1-164-217-11	CERAMIC CHIP 150PF 5% 50V	(TRV70E)
C251	1-162-926-11	CERAMIC CHIP 82PF 5% 50V	(TRV70E)
C251	1-164-218-11	CERAMIC CHIP 180PF 0.25PF 50V	(TRV30E/TRV50E)
C258	1-164-346-11	CERAMIC CHIP 1uF 16V	
C262	1-162-974-11	CERAMIC CHIP 0.01uF 50V	(TRV30E/TRV50E)
C263	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C264	1-135-180-21	TANTALUM CHIP 3.3uF 20% 6.3V	
C265	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	(TRV30E/TRV50E)
C266	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C267	1-135-180-21	TANTALUM CHIP 3.3uF 20% 6.3V	
C268	1-164-360-11	CERAMIC CHIP 0.1uF 16V	

Ref. No.	Part No.	Description	Remark
C271	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C272	1-135-180-21	TANTALUM CHIP 3.3uF 20% 6.3V	
C273	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C274	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C275	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	(TRV30E/TRV50E)
C276	1-162-916-11	CERAMIC CHIP 12PF 5% 50V	(TRV30E/TRV50E)
C279	1-162-958-11	CERAMIC CHIP 270PF 5% 50V	(TRV30E/TRV50E)
C281	1-164-218-11	CERAMIC CHIP 180PF 0.25PF 50V	(TRV30E/TRV50E)
C282	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	(TRV30E/TRV50E)
C284	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C285	1-135-318-11	TANTAL. CHIP 33uF 20% 4V	(TRV30E/TRV50E)
C286	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C288	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	(TRV30E/TRV50E)
C289	1-162-913-11	CERAMIC CHIP 8PF 0.5PF 50V	
C290	1-162-974-11	CERAMIC CHIP 0.01uF 50V	(TRV30E/TRV50E)
C291	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	(TRV30E/TRV50E)
C292	1-164-346-11	CERAMIC CHIP 1uF 16V	(TRV70E)
C293	1-162-918-11	CERAMIC CHIP 18PF 5% 50V	
C294	1-162-974-11	CERAMIC CHIP 0.01uF 50V	(TRV70E)
C295	1-135-180-21	TANTALUM CHIP 3.3uF 20% 6.3V	(TRV70E)
C296	1-162-974-11	CERAMIC CHIP 0.01uF 50V	(TRV70E)
C297	1-135-180-21	TANTALUM CHIP 3.3uF 20% 6.3V	(TRV70E)
C298	1-164-360-11	CERAMIC CHIP 0.1uF 16V	(TRV70E)
C299	1-162-974-11	CERAMIC CHIP 0.01uF 50V	(TRV30E/TRV50E)
C300	1-162-974-11	CERAMIC CHIP 0.01uF 50V	(TRV70E)
C301	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	(TRV30E/TRV50E)
C302	1-135-180-21	TANTALUM CHIP 3.3uF 20% 6.3V	(TRV70E)
C303	1-162-974-11	CERAMIC CHIP 0.01uF 50V	(TRV70E)
C304	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C305	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	(TRV30E/TRV50E)
C306	1-162-921-11	CERAMIC CHIP 33PF 5% 50V	
C307	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C308	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C310	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C311	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C312	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C314	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C315	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	
C316	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C328	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C331	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C333	1-162-915-11	CERAMIC CHIP 10PF 0.5PF50V	
C336	1-135-181-21	TANTALUM CHIP 4.7uF 20% 6.3V	
C398	1-162-925-11	CERAMIC CHIP 68PF 5% 50V	
C500	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	
C501	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C502	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C503	1-124-778-00	ELECT CHIP 22uF 20% 6.3V	
C504	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C506	1-124-778-00	ELECT CHIP 22uF 20% 6.3V	
C507	1-162-918-11	CERAMIC CHIP 18PF 5% 50V	
C508	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C509	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C510	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C511	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C512	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C513	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C514	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C515	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C516	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C518	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C519	1-164-346-11	CERAMIC CHIP 1uF 16V	
C521	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C522	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C523	1-164-492-11	CERAMIC CHIP 0.15uF 10% 16V	
C524	1-164-492-11	CERAMIC CHIP 0.15uF 10% 16V	
C525	1-164-217-11	CERAMIC CHIP 150PF 5% 50V	(TRV30E/TRV50E)
C526	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C527	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C528	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C529	1-164-677-11	CERAMIC CHIP 0.033uF 10% 16V	
C530	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C531	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C532	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C533	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C534	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C535	1-162-969-11	CERAMIC CHIP 0.0068uF 10% 25V	
C536	1-162-969-11	CERAMIC CHIP 0.0068uF 10% 25V	
C537	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C538	1-162-995-11	CERAMIC CHIP 0.022uF 50V	
C539	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C540	1-162-912-11	CERAMIC CHIP 7PF 0.5PF 50V	
C541	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C543	1-162-912-11	CERAMIC CHIP 7PF 0.5PF 50V	
C544	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C545	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C547	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C548	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C549	1-162-995-11	CERAMIC CHIP 0.022uF 50V	
C550	1-128-530-11	ELECT CHIP 33uF 20% 10V	

Ref. No.	Part No.	Description	Remark
C559	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C560	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C561	1-128-004-11	ELECT CHIP 10uF 20% 16V	
C562	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C563	1-162-957-11	CERAMIC CHIP 220PF 5% 50V	
C564	1-162-957-11	CERAMIC CHIP 220PF 5% 50V	
C565	1-162-995-11	CERAMIC CHIP 0.022uF 50V	
C566	1-162-995-11	CERAMIC CHIP 0.022uF 50V	
C567	1-164-173-11	CERAMIC CHIP 0.0039uF 10% 50V	
C568	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C569	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C570	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
C571	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C572	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C573	1-162-909-11	CERAMIC CHIP 4PF 0.25PF 50V	
C951	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C953	1-126-205-11	ELECT CHIP 47uF 20% 6.3V	
C955	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C959	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C961	1-164-346-11	CERAMIC CHIP 1uF 16V	
C962	1-162-917-11	CERAMIC CHIP 15PF 5% 50V	
C1251	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C1252	1-164-505-11	CERAMIC CHIP 2.2uF 16V	
C1254	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	(TRV70E)
C1255	1-164-005-11	CERAMIC CHIP 0.47uF 25V	(TRV70E)
C1256	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C1257	1-126-246-11	ELECT CHIP 220uF 20% 4V	(TRV70E)
C1258	1-135-149-21	TANTALUM CHIP 2.2uF 20% 10V	(TRV70E)
C1260	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	(TRV70E)
C1261	1-164-156-11	CERAMIC CHIP 0.1uF 25V	(TRV70E)
C1262	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	(TRV70E)
C1263	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C1264	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C1268	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C1274	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C1275	1-162-917-11	CERAMIC CHIP 15PF 5% 50V	
		< CONNECTOR >	
CN101	1-691-492-21	CONNECTOR, FFC/FPC 13P	
CN102	1-580-789-21	PIN, CONNECTOR (SMD) 6P	
CN201	1-766-343-21	CONNECTOR, FFC/FPC 13P	
* CN202	1-691-929-11	CONNECTOR, BOARD TO BOARD 34P	
* CN203	1-764-396-21	CONNECTOR, BOARD TO BOARD 42P	
* CN204	1-573-306-11	CONNECTOR, BOARD TO BOARD 12P	
* CN205	1-573-313-11	CONNECTOR, BOARD TO BOARD 26P	(TRV70E)
CN206	1-766-344-21	CONNECTOR, FFC/FPC 14P	
CN502	1-764-708-11	CONNECTOR, FFC/FPC (LIF) 9P	
CN503	1-766-353-21	CONNECTOR, FFC/FPC 23P	
CN504	1-695-325-11	CONNECTOR, BOARD TO BOARD 42P	
* CN505	1-764-397-21	CONNECTOR, BOARD TO BOARD 42P	

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D101	8-719-800-76	DIODE 1SS226 (TRV30E/TRV50E)	
D102	8-719-404-49	DIODE MA111	
D201	8-719-027-50	DIODE MA142WK	
D204	8-719-027-50	DIODE MA142WK	
D208	8-719-027-50	DIODE MA142WK	
D214	8-719-404-49	DIODE MA111	
D216	8-719-027-50	DIODE MA142WK	
D217	8-719-404-49	DIODE MA111	
D218	8-719-800-76	DIODE 1SS226	
D219	8-719-404-49	DIODE MA111	
D321	8-719-052-33	DIODE MAZV082DFL	
D323	8-719-017-25	DIODE 02DZ13-TPH3 (TRV70E)	
D324	8-719-017-25	DIODE 02DZ13-TPH3 (TRV70E)	
⚠D501	8-719-421-27	DIODE MA728	
D504	8-719-404-49	DIODE MA111	
D505	8-719-404-49	DIODE MA111	
D506	8-719-404-49	DIODE MA111	
D1251	8-719-027-50	DIODE MA142WK	
D1252	8-719-027-50	DIODE MA142WK(TRV70E)	
D1253	8-719-052-33	DIODE MAZV082DFL (TRV70E)	
D1254	8-719-052-33	DIODE MAZV082DFL (TRV70E)	
D1255	8-719-017-25	DIODE 02DZ13-TPH3 (TRV70E)	
		< FILTER >	
FL202	1-239-010-11	FILTER, LOW PASS (CCD.PAL.Y) (TRV70E)	
FL202	1-239-055-21	FILTER, LOW PASS (CCD.PAL.Y) (TRV30E/TRV50E)	
		< IC >	
IC102	8-752-069-78	IC CXA1704R	
IC201	8-752-072-54	IC CXA1700AR (TRV30E/TRV50E)	
IC201	8-752-072-55	IC CXA1810AR (TRV70E)	
IC203	8-752-351-95	IC CXL1506N	
IC204	8-752-351-95	IC CXL1506N (TRV70E)	
IC205	8-752-053-21	IC CXA1211M	
IC209	8-759-327-93	IC TK16031AMTL	
IC251	8-752-069-60	IC CXA1812Q	
IC501	8-759-278-57	IC AK6420HF-E2	
IC502	8-759-295-62	IC S-8423DFS	
IC503	8-759-328-92	IC MB89098PFV-G-127-BND	
IC505	8-752-862-21	IC CXP87132-043R	
IC506	8-759-169-11	IC CXA1575M-E2	
IC508	8-759-195-09	IC XR1083CQ-E2 (TRV30E/TRV50E)	
IC508	8-759-267-62	IC MB4470APFQ-G-BND-ER (TRV70E)	
IC951	8-759-169-02	IC MB88344BPFV-G-BND-ER	
IC951	8-759-290-12	IC M62370GP-650D	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		< COIL >	
L102	1-412-066-21	INDUCTOR CHIP 220uH	
L103	1-412-066-21	INDUCTOR CHIP 220uH	
L104	1-412-951-11	INDUCTOR 10uH	
L105	1-412-066-21	INDUCTOR CHIP 220uH	
L108	1-412-060-11	INDUCTOR CHIP 22uH	
L109	1-412-957-11	INDUCTOR 33uH	
L110	1-410-657-21	INDUCTOR CHIP 180uH (TRV30E/TRV50E)	
L111	1-412-950-11	INDUCTOR 8.2uH (TRV30E/TRV50E)	
L112	1-412-280-31	INDUCTOR 330uH	
L113	1-412-957-11	INDUCTOR 33uH (TRV30E/TRV50E)	
L114	1-412-282-41	INDUCTOR 470uH	
L115	1-412-280-31	INDUCTOR 330uH (TRV30E/TRV50E)	
L116	1-410-657-21	INDUCTOR CHIP 180uH	
L118	1-410-655-31	INDUCTOR CHIP 120uH (TRV30E/TRV50E)	
L119	1-412-958-21	INDUCTOR 39uH (TRV70E)	
L120	1-412-951-11	INDUCTOR 10uH (TRV30E/TRV50E)	
L121	1-412-952-11	INDUCTOR 12uH (TRV70E)	
L122	1-412-058-11	INDUCTOR CHIP 10uH	
L123	1-412-949-21	INDUCTOR 6.8uH (TRV70E)	
L201	1-412-963-11	INDUCTOR 100uH (TRV70E)	
L202	1-414-078-11	INDUCTOR 10uH	
L204	1-412-963-11	INDUCTOR 100uH (TRV30E/TRV50E)	
L207	1-216-295-91	CONDUCTOR, CHIP (2012)(TRV30E/TRV50E)	
L209	1-412-960-21	INDUCTOR 56uH (TRV30E/TRV50E)	
L210	1-412-953-11	INDUCTOR 15uH	
L211	1-412-954-11	INDUCTOR 18uH	
L213	1-412-953-11	INDUCTOR 15uH (TRV30E/TRV50E)	
L214	1-412-960-21	INDUCTOR 56uH (TRV30E/TRV50E)	
L399	1-412-950-11	INDUCTOR 8.2uH	
L500	1-414-078-11	INDUCTOR 10uH	
L501	1-414-078-11	INDUCTOR 10uH	
L502	1-216-295-91	CONDUCTOR, CHIP (2012)	
L503	1-412-961-11	INDUCTOR 68uH	
L504	1-414-078-11	INDUCTOR 10uH	
L506	1-414-078-11	INDUCTOR 10uH	
L951	1-414-078-11	INDUCTOR 10uH	
L952	1-414-072-11	INDUCTOR 1uH	
L954	1-412-963-11	INDUCTOR 100uH	
L1251	1-414-078-11	INDUCTOR 10uH (TRV70E)	
L1252	1-414-078-11	INDUCTOR 10uH	
L1253	1-412-963-11	INDUCTOR 100uH	
		< IC LINK >	
⚠PS500	1-576-122-21	LINK, IC (CCP2E10 0.4A)	
⚠PS501	1-576-122-21	LINK, IC (CCP2E10 0.4A)	
		< TRANSISTOR >	
Q101	8-729-420-24	TRANSISTOR 2SB1218A-QRS	

Ref. No.	Part No.	Description	Remark
Q102	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q103	8-729-216-22	TRANSISTOR 2SA1162	
Q104	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q105	8-729-402-42	TRANSISTOR UN5213	
Q106	8-729-402-42	TRANSISTOR UN5213 (TRV30E)	
Q109	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q111	8-729-015-74	TRANSISTOR UN5111 (TRV30E/TRV50E)	
Q112	8-729-117-73	TRANSISTOR 2SC4178-F14 (TRV30E/TRV50E)	
Q113	8-729-420-24	TRANSISTOR 2SB1218A-QRS(TRV30E/TRV50E)	
Q114	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q115	8-729-012-50	TRANSISTOR 2SC4400-3/4/5(TRV30E/TRV50E)	
Q116	8-729-012-50	TRANSISTOR 2SC4400-3/4/5 (TRV70E)	
Q117	8-729-230-63	TRANSISTOR 2SC4116-YG (TRV30E/TRV50E)	
Q118	8-729-420-24	TRANSISTOR 2SB1218A-QRS (TRV70E)	
Q119	8-729-230-63	TRANSISTOR 2SC4116-YG (TRV30E/TRV50E)	
Q121	8-729-012-50	TRANSISTOR 2SC4400-3/4/5 (TRV70E)	
Q124	8-729-230-63	TRANSISTOR 2SC4116-YG (TRV70E)	
Q125	8-729-402-42	TRANSISTOR UN5213 (TRV70E)	
Q126	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q127	8-729-402-42	TRANSISTOR UN5213	
Q129	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q131	8-729-015-74	TRANSISTOR UN5111	
Q132	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q133	8-729-012-50	TRANSISTOR 2SC4400-3/4/5	
Q134	8-729-402-48	TRANSISTOR UN521E	
Q135	8-729-402-48	TRANSISTOR UN521E	
Q136	8-729-420-53	TRANSISTOR UN5115 (TRV70E)	
Q202	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q204	8-729-402-42	TRANSISTOR UN5213	
Q214	8-729-420-20	TRANSISTOR XN4312	
Q217	8-729-420-12	TRANSISTOR XN4213	
Q219	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q221	8-729-013-15	TRANSISTOR 2SC4909-TL (TRV70E)	
Q222	8-729-403-35	TRANSISTOR UN5113 (TRV70E)	
Q223	8-729-013-15	TRANSISTOR 2SC4909-TL (TRV70E)	
Q224	8-729-402-42	TRANSISTOR UN5213 (TRV70E)	
Q225	8-729-015-76	TRANSISTOR UN5211	
Q226	8-729-807-86	TRANSISTOR 2SB1295-UL5	
Q227	8-729-402-42	TRANSISTOR UN5213	
Q228	8-729-807-86	TRANSISTOR 2SB1295-UL5	
Q230	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q232	8-729-420-24	TRANSISTOR 2SB1218A-QRS (TRV30E/TRV50E)	
Q234	8-729-230-63	TRANSISTOR 2SC4116-YG (TRV30E/TRV50E)	
Q235	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q236	8-729-230-63	TRANSISTOR 2SC4116-YG (TRV30E/TRV50E)	
Q237	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q238	8-729-230-63	TRANSISTOR 2SC4116-YG (TRV30E/TRV50E)	
Q240	8-729-230-63	TRANSISTOR 2SC4116-YG (TRV30E/TRV50E)	
Q241	8-729-230-63	TRANSISTOR 2SC4116-YG (TRV30E/TRV50E)	
Q242	8-729-420-24	TRANSISTOR 2SB1218A-QRS (TRV30E/TRV50E)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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Ref.No.	Part No.	Description	Remark
Q243	8-729-402-42	TRANSISTOR UN5213	(TRV70E)
Q244	8-729-402-42	TRANSISTOR UN5213	
Q246	8-729-402-81	TRANSISTOR XN4501	(TRV30E/TRV50E)
Q247	8-729-402-42	TRANSISTOR UN5213	(TRV30E/TRV50E)
Q248	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q249	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q253	8-729-420-56	TRANSISTOR UN511E	
Q254	8-729-403-35	TRANSISTOR UN5113	
Q255	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q256	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV30E/TRV50E)
Q257	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV30E/TRV50E)
Q258	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q259	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q260	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q262	8-729-402-42	TRANSISTOR UN5213	
Q263	8-729-402-42	TRANSISTOR UN5213	
Q264	8-729-402-42	TRANSISTOR UN5213	
Q265	8-729-823-16	TRANSISTOR 2SC4555-5.6.7	
Q266	8-729-402-42	TRANSISTOR UN5213	(TRV30E/TRV50E)
Q267	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q500	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q501	8-729-403-27	TRANSISTOR XN4401	
Q502	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q503	8-729-402-81	TRANSISTOR XN4501	
Q504	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q506	8-729-402-42	TRANSISTOR UN5213	
Q507	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q508	8-729-807-87	TRANSISTOR 2SB1295-UL6	
Q509	8-729-420-20	TRANSISTOR XN4312	
Q510	8-729-402-42	TRANSISTOR UN5213	
Q511	8-729-402-42	TRANSISTOR UN5213	
Q951	8-729-101-07	TRANSISTOR 2SB798-DL	
Q952	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q956	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q958	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q959	8-729-402-42	TRANSISTOR UN5213	
Q960	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q1252	8-729-402-42	TRANSISTOR UN5213	
Q1253	8-729-823-16	TRANSISTOR 2SC4555-5.6.7	(TRV70E)
Q1254	8-729-823-16	TRANSISTOR 2SC4555-5.6.7	(TRV70E)
Q1258	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q1259	8-729-420-20	TRANSISTOR XN4312	
		< RESISTOR >	
R100	1-216-857-11	METAL CHIP 1M 5% 1/16W	(TRV70E)
R101	1-216-864-11	METAL CHIP 0 5% 1/16W	
R102	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R103	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R104	1-216-815-11	METAL CHIP 330 5% 1/16W	(TRV70E)
R104	1-216-819-11	METAL CHIP 680 5% 1/16W	(TRV30E/TRV50E)
R105	1-216-816-11	METAL CHIP 390 5% 1/16W	(TRV70E)
R105	1-216-819-11	METAL CHIP 680 5% 1/16W	(TRV30E/TRV50E)
R106	1-216-814-11	METAL CHIP 270 5% 1/16W	
R107	1-216-813-11	METAL CHIP 220 5% 1/16W	
R108	1-216-800-11	METAL GLAZE 18 5% 1/16W	(TRV30E/TRV50E)
R108	1-216-801-11	METAL CHIP 22 5% 1/16W	(TRV70E)
R109	1-216-803-11	METAL CHIP 33 5% 1/16W	(TRV70E)
R109	1-216-805-11	METAL CHIP 47 5% 1/16W	(TRV30E/TRV50E)
R110	1-216-818-11	METAL CHIP 560 5% 1/16W	
R111	1-218-875-11	METAL CHIP 15K 0.50% 1/16W	
R112	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R114	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	(TRV30E/TRV50E)
R114	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	(TRV70E)
R117	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R118	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R119	1-216-824-11	METAL CHIP 1.8K 5% 1/16W	(TRV30E/TRV50E)
R119	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV70E)
R120	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R122	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R123	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R124	1-216-864-11	METAL CHIP 0 5% 1/16W	
R126	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R127	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R128	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R129	1-809-357-21	THERMISTOR, NTC (2125)	(TRV30E/TRV50E)
R130	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	(TRV30E/TRV50E)
R131	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	(TRV30E/TRV50E)
R132	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	(TRV30E/TRV50E)
R133	1-216-819-11	METAL CHIP 680 5% 1/16W	
R134	1-216-834-11	METAL CHIP 12K 5% 1/16W	(TRV30E/TRV50E)
R135	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV30E/TRV50E)
R136	1-216-820-11	METAL CHIP 820 5% 1/16W	(TRV30E/TRV50E)
R137	1-216-821-11	METAL CHIP 1K 5% 1/16W	(TRV30E/TRV50E)
R138	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R139	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R140	1-216-813-11	METAL CHIP 220 5% 1/16W	
R141	1-216-817-11	METAL CHIP 470 5% 1/16W	(TRV30E/TRV50E)

Ref. No.	Part No.	Description				Remark
R142	1-216-818-11	METAL CHIP	560	5%	1/16W	(TRV30E/TRV50E)
R143	1-216-808-11	METAL CHIP	82	5%	1/16W	(TRV30E/TRV50E)
R144	1-216-818-11	METAL CHIP	560	5%	1/16W	
R146	1-216-809-11	METAL CHIP	100	5%	1/16W	(TRV30E/TRV50E)
R147	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	(TRV30E/TRV50E)
R148	1-216-813-11	METAL CHIP	220	5%	1/16W	(TRV30E/TRV50E)
R149	1-216-813-11	METAL CHIP	220	5%	1/16W	(TRV30E/TRV50E)
R150	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R151	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	(TRV30E/TRV50E)
R152	1-216-824-11	METAL CHIP	1.8K	5%	1/16W	(TRV30E/TRV50E)
R153	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	(TRV30E)
R153	1-216-837-11	METAL CHIP	22K	5%	1/16W	(TRV50E)
R154	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV30E/TRV50E)
R155	1-216-817-11	METAL CHIP	470	5%	1/16W	(TRV70E)
R156	1-216-817-11	METAL CHIP	470	5%	1/16W	(TRV70E)
R157	1-216-817-11	METAL CHIP	470	5%	1/16W	(TRV70E)
R158	1-216-836-11	METAL CHIP	18K	5%	1/16W	(TRV30E/TRV50E)
R159	1-216-836-11	METAL CHIP	18K	5%	1/16W	(TRV30E/TRV50E)
R160	1-216-818-11	METAL CHIP	560	5%	1/16W	(TRV30E/TRV50E)
R161	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV70E)
R162	1-216-818-11	METAL CHIP	560	5%	1/16W	(TRV30E/TRV50E)
R163	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV30E/TRV50E)
R164	1-216-804-11	METAL CHIP	39	5%	1/16W	(TRV30E/TRV50E)
R165	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV30E/TRV50E)
R166	1-216-816-11	METAL CHIP	390	5%	1/16W	(TRV30E/TRV50E)
R167	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV70E)
R168	1-216-815-11	METAL CHIP	330	5%	1/16W	(TRV70E)
R169	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV70E)
R171	1-216-824-11	METAL CHIP	1.8K	5%	1/16W	(TRV30E/TRV50E)
R173	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	(TRV70E)
R174	1-216-816-11	METAL CHIP	390	5%	1/16W	(TRV70E)
R175	1-216-815-11	METAL CHIP	330	5%	1/16W	(TRV70E)
R175	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV30E/TRV50E)
R178	1-216-809-11	METAL CHIP	100	5%	1/16W	
R179	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R180	1-216-809-11	METAL CHIP	100	5%	1/16W	
R181	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R182	1-216-817-11	METAL CHIP	470	5%	1/16W	(TRV70E)
R185	1-216-847-11	METAL CHIP	150K	5%	1/16W	
R186	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R187	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R188	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R189	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R190	1-216-817-11	METAL CHIP	470	5%	1/16W	(TRV70E)
R191	1-216-815-11	METAL CHIP	330	5%	1/16W	(TRV70E)
R193	1-216-815-11	METAL CHIP	330	5%	1/16W	
R194	1-216-818-11	METAL CHIP	560	5%	1/16W	
R195	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R196	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R201	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R202	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R203	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R206	1-216-817-11	METAL CHIP	470	5%	1/16W	(TRV70E)
R206	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV30E/TRV50E)
R207	1-216-804-11	METAL CHIP	39	5%	1/16W	
R208	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV70E)
R209	1-216-814-11	METAL CHIP	270	5%	1/16W	
R210	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R211	1-216-803-11	METAL CHIP	33	5%	1/16W	
R213	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R214	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R215	1-216-819-11	METAL CHIP	680	5%	1/16W	
R216	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R217	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R218	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R219	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R224	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R226	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R228	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R229	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R230	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R231	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R232	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R234	1-216-864-11	METAL CHIP	0	5%	1/16W	
R235	1-218-877-11	METAL CHIP	18K	0.50%	1/16W	
R245	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R246	1-216-819-11	METAL CHIP	680	5%	1/16W	
R247	1-216-815-11	METAL CHIP	330	5%	1/16W	
R253	1-218-849-11	METAL CHIP	1.2K	0.50%	1/16W	
R255	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R256	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R259	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W	
R261	1-216-821-11	METAL CHIP	1K	5%	1/16W	

Ref.No.	Part No.	Description				Remark
R262	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R263	1-218-839-11	METAL GLAZE	470	0.50%	1/16W	
R264	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	(TRV70E)
R265	1-216-818-11	METAL CHIP	560	5%	1/16W	
R266	1-218-837-11	METAL GLAZE	390	0.50%	1/16W	(TRV70E)
R269	1-216-864-11	METAL CHIP	0	5%	1/16W	
R270	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R271	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R272	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R273	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R274	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R279	1-216-819-11	METAL CHIP	680	5%	1/16W	
R280	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R282	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R283	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV30E/TRV50E)
R284	1-216-295-91	CONDUCTOR, CHIP (2012)				(TRV30E/TRV50E)
R285	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R286	1-216-818-11	METAL CHIP	560	5%	1/16W	(TRV30E/TRV50E)
R287	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV70E)
R288	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R289	1-216-810-11	METAL CHIP	120	5%	1/16W	
R291	1-216-833-11	METAL CHIP	10K	5%	1/16W	(TRV30E/TRV50E)
R292	1-216-864-11	METAL CHIP	0	5%	1/16W	
R293	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R296	1-216-815-11	METAL CHIP	330	5%	1/16W	(TRV30E/TRV50E)
R297	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	(TRV30E/TRV50E)
R300	1-216-817-11	METAL CHIP	470	5%	1/16W	(TRV30E/TRV50E)
R302	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV30E/TRV50E)
R303	1-216-809-11	METAL CHIP	100	5%	1/16W	(TRV30E/TRV50E)
R304	1-216-833-11	METAL CHIP	10K	5%	1/16W	(TRV30E/TRV50E)
R305	1-216-820-11	METAL CHIP	820	5%	1/16W	(TRV30E/TRV50E)
R307	1-216-813-11	METAL CHIP	220	5%	1/16W	(TRV30E/TRV50E)
R308	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R309	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R312	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R313	1-216-820-11	METAL CHIP	820	5%	1/16W	
R314	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV30E/TRV50E)
R315	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R316	1-216-815-11	METAL CHIP	330	5%	1/16W	(TRV30E/TRV50E)

Ref.No.	Part No.	Description				Remark
R317	1-216-820-11	METAL CHIP	820	5%	1/16W	(TRV30E/TRV50E)
R318	1-216-820-11	METAL CHIP	820	5%	1/16W	(TRV30E/TRV50E)
R319	1-216-818-11	METAL CHIP	560	5%	1/16W	(TRV30E/TRV50E)
R320	1-216-817-11	METAL CHIP	470	5%	1/16W	
R321	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV30E/TRV50E)
R322	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R323	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R324	1-216-820-11	METAL CHIP	820	5%	1/16W	
R325	1-216-822-11	METAL CHIP	1.2K	5%	1/16W	
R327	1-216-820-11	METAL CHIP	820	5%	1/16W	
R328	1-216-820-11	METAL CHIP	820	5%	1/16W	(TRV30E/TRV50E)
R329	1-216-833-11	METAL CHIP	10K	5%	1/16W	(TRV30E/TRV50E)
R330	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	(TRV30E/TRV50E)
R331	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	(TRV30E/TRV50E)
R332	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R334	1-216-815-11	METAL CHIP	330	5%	1/16W	(TRV30E/TRV50E)
R338	1-216-811-11	METAL CHIP	150	5%	1/16W	(TRV30E/TRV50E)
R339	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R342	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	(TRV30E/TRV50E)
R343	1-216-853-11	METAL CHIP	470K	5%	1/16W	(TRV70E)
R346	1-216-857-11	METAL CHIP	1M	5%	1/16W	(TRV70E)
R347	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R348	1-216-839-11	METAL CHIP	33K	5%	1/16W	(TRV30E/TRV50E)
R350	1-216-844-11	METAL CHIP	82K	5%	1/16W	(TRV70E)
R351	1-216-810-11	METAL CHIP	120	5%	1/16W	(TRV70E)
R354	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	(TRV30E/TRV50E)
R355	1-216-842-11	METAL CHIP	56K	5%	1/16W	
R356	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R357	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	(TRV30E/TRV50E)
R358	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R359	1-216-817-11	METAL CHIP	470	5%	1/16W	
R360	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R361	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R362	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R363	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R365	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV30E/TRV50E)
R366	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV30E/TRV50E)

Ref.No.	Part No.	Description				Remark
R368	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R373	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R375	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV70E)
R380	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R381	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R383	1-216-842-11	METAL CHIP	56K	5%	1/16W	
R387	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R391	1-216-864-11	METAL CHIP	0	5%	1/16W	
R395	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV30E/TRV50E)
R395	1-216-820-11	METAL CHIP	820	5%	1/16W	(TRV70E)
R398	1-216-820-11	METAL CHIP	820	5%	1/16W	
R399	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R500	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R501	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R503	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R505	1-216-864-11	METAL CHIP	0	5%	1/16W	
R506	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R507	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R508	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R509	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R510	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R511	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R512	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R513	1-216-837-11	METAL CHIP	22K	5%	1/16W	(TRV70E)
R513	1-216-839-11	METAL CHIP	33K	5%	1/16W	(TRV30E/TRV50E)
R514	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R515	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R516	1-216-845-11	METAL CHIP	100K	5%	1/16W	(TRV30E/TRV50E)
R517	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R518	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R519	1-216-817-11	METAL CHIP	470	5%	1/16W	
R520	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R522	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R525	1-216-853-11	METAL CHIP	470K	5%	1/16W	(TRV70E)
R525	1-216-856-11	METAL CHIP	820K	5%	1/16W	(TRV30E/TRV50E)
R526	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R527	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R528	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R529	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R530	1-216-019-00	METAL CHIP	56	5%	1/10W	
R531	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R532	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R533	1-217-671-11	METAL CHIP	1	5%	1/10W	
R534	1-217-671-11	METAL CHIP	1	5%	1/10W	
R535	1-217-671-11	METAL CHIP	1	5%	1/10W	
R536	1-217-671-11	METAL CHIP	1	5%	1/10W	
R537	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	(TRV70E)

Ref.No.	Part No.	Description				Remark
R537	1-216-836-11	METAL CHIP	18K	5%	1/16W	(TRV30E/TRV50E)
R538	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R539	1-216-837-11	METAL CHIP	22K	5%	1/16W	(TRV70E)
R539	1-216-841-11	METAL CHIP	47K	5%	1/16W	(TRV30E/TRV50E)
R540	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R541	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R542	1-216-864-11	METAL CHIP	0	5%	1/16W	
R543	1-216-864-11	METAL CHIP	0	5%	1/16W	
R544	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R546	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R548	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R549	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R550	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R551	1-216-864-11	METAL CHIP	0	5%	1/16W	
R552	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R553	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R554	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R555	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R556	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R558	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R561	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R562	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R563	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R567	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R569	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R570	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R572	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R573	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R575	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV70E)
R577	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R578	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R580	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R581	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R582	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R584	1-216-864-11	METAL CHIP	0	5%	1/16W	
R585	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R586	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R587	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R588	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R589	1-216-864-11	METAL CHIP	0	5%	1/16W	
R590	1-216-845-11	METAL CHIP	100K	5%	1/16W	(TRV30E/TRV50E)
R591	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R592	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R595	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R596	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R597	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R954	1-216-138-00	METAL CHIP	3.3	5%	1/8W	

Ref. No.	Part No.	Description	Remark
R955	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R956	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R957	1-216-820-11	METAL CHIP 820 5% 1/16W	
R961	1-216-818-11	METAL CHIP 560 5% 1/16W	
R962	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R964	1-216-822-11	METAL CHIP 1.2K 5% 1/16W	
R965	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R966	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R967	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	
R968	1-216-834-11	METAL CHIP 12K 5% 1/16W	
R969	1-216-817-11	METAL CHIP 470 5% 1/16W	
R972	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R1251	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R1252	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV30E/TRV50E)
R1259	1-216-821-11	METAL CHIP 1K 5% 1/16W	(TRV70E)
R1260	1-216-815-11	METAL CHIP 330 5% 1/16W	(TRV70E)
R1265	1-216-804-11	METAL CHIP 39 5% 1/16W	(TRV70E)
R1266	1-216-803-11	METAL CHIP 33 5% 1/16W	(TRV70E)
R1267	1-216-804-11	METAL CHIP 39 5% 1/16W	(TRV70E)
R1268	1-216-803-11	METAL CHIP 33 5% 1/16W	(TRV70E)
R1270	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1275	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1279	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV70E)
R1280	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV70E)
R1281	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R1282	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R1284	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1285	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV30E/TRV50E)
R1286	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	(TRV70E)
R1287	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	(TRV70E)
R1400	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1401	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1403	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R1404	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R1405	1-216-819-11	METAL CHIP 680 5% 1/16W	
R1406	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1407	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R1409	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R1410	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	

< COMPOSITION CIRCUIT BLOCK >

Ref. No.	Part No.	Description	Remark
RB500	1-236-436-11	NETWORK, RES 100K	
RB501	1-236-432-11	NETWORK, RES 47K	
RB503	1-236-432-11	NETWORK, RES 47K	
RB504	1-236-412-11	NETWORK, RES 1.0K	
RB505	1-236-412-11	NETWORK, RES 1.0K	
RB506	1-236-412-11	NETWORK, RES 1.0K	
RB507	1-236-448-11	NETWORK, RES 1.0M	
RB508	1-236-436-11	NETWORK, RES 100K	
RB509	1-236-444-11	NETWORK, RES 470K	
RB512	1-236-412-11	NETWORK, RES 1.0K	
RB514	1-236-907-11	RESISTOR, NETWORK (CHIP TYPE)	
RB515	1-236-904-11	RESISTOR, NETWORK (CHIP TYPE)	
RB516	1-236-904-11	RESISTOR, NETWORK (CHIP TYPE)	
RB518	1-236-971-11	NETWORK, RES 0	
RB519	1-236-971-11	NETWORK, RES 0	
RB520	1-236-904-11	RESISTOR, NETWORK (CHIP TYPE)	
RB521	1-236-412-11	NETWORK, RES 1.0K	
RB522	1-236-448-11	NETWORK, RES 1.0M	
RB524	1-236-908-11	RESISTOR, NETWORK (CHIP TYPE)	
RB525	1-236-424-11	NETWORK, RES 10K	
RB526	1-236-908-11	RESISTOR, NETWORK (CHIP TYPE)	
RB527	1-236-424-11	NETWORK, RES 10K	
RB528	1-236-424-11	NETWORK, RES 10K	
RB529	1-236-424-11	NETWORK, RES 10K	
RB530	1-236-424-11	NETWORK, RES 10K	
RB531	1-236-424-11	NETWORK, RES 10K	
RB532	1-236-424-11	NETWORK, RES 10K	
RB533	1-236-412-11	NETWORK, RES 1.0K	
RB534	1-236-412-11	NETWORK, RES 1.0K	
RB535	1-236-908-11	RESISTOR, NETWORK (CHIP TYPE)	
RB536	1-236-412-11	NETWORK, RES 1.0K	
RB537	1-236-412-11	NETWORK, RES 1.0K	
RB542	1-236-412-11	NETWORK, RES 1.0K	
RB543	1-236-412-11	NETWORK, RES 1.0K	
RB544	1-236-412-11	NETWORK, RES 1.0K	
RB547	1-236-444-11	NETWORK, RES 470K	
RB548	1-236-416-11	NETWORK, RES 2.2K	
RB549	1-236-971-11	NETWORK, RES 0	
RB551	1-236-412-11	NETWORK, RES 1.0K	
RB552	1-236-412-11	NETWORK, RES 1.0K	
RB553	1-236-412-11	NETWORK, RES 1.0K	
RB554	1-236-971-11	NETWORK, RES 0	

< VIBRATOR >

Ref. No.	Part No.	Description	Remark
X201	1-579-366-11	VIBRATOR, CRYSTAL (4.43MHz)	
X501	1-579-550-11	VIBRATOR, CRYSTAL (32.768kHz)	
X502	1-760-315-11	VIBRATOR, CRYSTAL (11.719MHz)	
XTL501	1-579-369-21	VIBRATOR (10MHz)	

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* A-7072-232-A ZB-2 (NO BZ) BOARD, COMPLETE
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(Ref. No. 2,000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C102	1-164-346-11	CERAMIC CHIP 1uF 16V	
C103	1-164-346-11	CERAMIC CHIP 1uF 16V	

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CN101	1-691-483-21	CONNECTOR, FFC/FPC 4P	
		< BATTERY HOLDER >	
LI101	1-550-104-11	HOLDER, BATTERY	

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MISCELLANEOUS

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12	1-769-729-11	CABLE, FLAT (FFC-153)	
13	1-769-730-11	CABLE, FLAT (FFC-154)	
18	1-473-165-11	SWITCH BLOCK, CONTROL (ZOOM)	
116	1-656-985-11	FP-331 FLEXIBLE BOARD	
128	1-769-728-11	CABLE, FLAT (FFC-152)	
132	1-656-729-11	FP-320 FLEXIBLE BOARD	
133	1-656-728-11	FP-319 FLEXIBLE BOARD	
135	1-769-727-11	CABLE, FLAT (FFC-151)	
169	1-656-985-11	FP-331 FLEXIBLE BOARD	
170	1-656-728-11	FP-319 FLEXIBLE BOARD	
171	1-656-729-11	FP-320 FLEXIBLE BOARD	
173	1-769-728-11	CABLE, FLAT (FFC-152)	
174	1-769-727-11	CABLE, FLAT (FFC-151)	
175	1-769-732-11	CABLE, FLAT (FFC-166) (TRV50E/TRV70E)	
208	1-954-565-11	HARNESS (SP-145)	
209	1-954-564-11	HARNESS (SP-144)	
210	1-467-479-21	PLATE, LIGHT GUIDE BLOCK (TRV30E)	
256	1-954-565-11	HARNESS (SP-145)	
257	1-954-564-11	HARNESS (SP-144)	
309	1-656-508-11	FP-280 FLEXIBLE BOARD (TRV30E)	
359	1-656-509-11	FP-281 FLEXIBLE BOARD (TRV50E/TRV70E)	
402	1-473-166-11	SWITCH BLOCK, CONTROL (FK)	
402	1-473-166-21	SWITCH BLOCK, CONTROL (FK)	
408	1-691-471-11	CONNECTOR, TRANSLATION 11P	
412	1-651-891-11	FP-52 FLEXIBLE BOARD (TRV30E/TRV50E)	
412	1-651-892-11	FP-53 FLEXIBLE BOARD (TRV70E)	
419	1-656-507-11	FP-279 FLEXIBLE BOARD (TRV70E)	
455	1-651-890-11	FP-49 FLEXIBLE BOARD (TRV50E/TRV70E)	
462	1-547-558-21	FILTER BLOCK, OPTICAL (TRV30E)	
462	1-547-735-51	FILTER BLOCK, OPTICAL (TRV50E/TRV70E)	
464	1-547-716-11	LENS, ZOOM (VCL-5412WA) (TYPE II)	
464	8-848-704-01	DEVICE, LENS LSV-140A (TYPE I)	
465	1-657-049-11	FP-44 FLEXIBLE BOARD	
801	A-7049-521-A	DRUM ASSY, UPPER (DGR-90-R) (TRV30E/TRV50E)	
801	A-7049-607-A	DRUM ASSY, UPPER (DGR-94-R) (TRV70E)	
807	1-568-323-11	CONNECTOR, BOARD TO BOARD 4P	
871	1-641-643-12	FP-444 FLEXIBLE BOARD	
872	1-691-254-13	CONNECTOR, TRANSLATION 10P	
874	1-641-639-13	FP-442 FLEXIBLE BORD	
875	1-645-271-11	FP-575 FLEXIBLE BORD	
BL002	1-517-300-21	TUBE, FLUORESCENT, COLD CATHODE (TRV30E)	
BL001	1-517-411-11	TUBE, FLUORESCENT, COLD CATHODE (TRV50E/TRV70E)	
LCD901	1-810-862-21	INDICATOR MODULE, LIQUID CRYST	
LCD902	1-810-761-21	DISPLAY MODULE, LIQUID CRYSTAL (TRV30E)	
IC691	A-7030-369-A	CCD BLOCK ASSY (AUTO) (TRV30E)	
IC691	A-7030-495-A	CCD BLOCK ASSY (AUTO) (TRV50E/TRV70E)	
J201	1-537-373-71	JACK BOARD ASSY (TRV70E)	
J201	1-537-726-11	TERMINAL BOARD (TRV30E)	
J201	1-537-747-11	TERMINAL BOARD (TRV50E)	
M901	A-7048-585-A	DRUM ASSY (DGH-90A-R) (TRV30E/TRV70E)	
M901	A-7048-808-A	DRUM ASSY (DGH-0C3A-R) (TRV70E)	
M902	8-835-477-12	MOTOR, DC SCE-0101A (CAPSTAN)	
M903	A-7040-304-A	MOTOR BLOCK ASSY, LM (LOADING)	
M905	1-698-364-01	MOTOR ASSY, FOCUS	
M906	1-698-363-01	MOTOR ASSY, ZOOM	
M907	3-708-888-01	METER, IG (IRIS)	
M908	3-708-889-01	MOTOR ASSY, FOCUS	
M909	3-708-887-01	MOTOR ASSY, ZOOM	
MIC1	1-542-259-11	MICROPHONE, CAP	
MIC2	1-542-259-11	MICROPHONE, CAP	
S001	1-572-986-11	SWITCH, ROTARY (ENCODER)	
S002	1-572-987-11	SWITCH, PUSH (3 KEY) (REC PROOF, ME/MP, MP/MP-HG)	
S005	1-570-771-21	SWITCH (C DOWN)	
SE691	1-810-725-31	SENSOR, ANGULAR VELOCITY (TRV50E/TRV70E)	
SE692	1-810-725-41	SENSOR, ANGULAR VELOCITY (TRV50E/TRV70E)	
SP901	1-504-666-11	SPEAKER (4CM)	
⚠V901	1-452-673-11	CRT ASSY (M01KXX90WB)	
W500	1-651-889-11	FP-48 (SL) FLEXIBLE BOARD	
W501	1-642-186-11	FP-437 FLEXIBLE BOARD	

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ACCESSORIES & PACKING MATERIALS

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	1-467-574-21	REMOTE COMMANDER (RMT-708)	
	1-574-039-11	CORD, CONNECTION (TRV30E) (A/V CONNECTING CABLE (MONORAL), 1.5M)	
	1-575-334-11	CORD, CONNECTION (TRV50E/TRV70E) (A/V CONNECTING CABLE (STEREO), 1.5M)	
	1-575-335-21	CORD, CONNECTION (TRV70E) (S VIDEO CONNECTING CABLE (STEREO), 1.5M)	
	1-764-622-11	ADAPTOR, CONVERSION (TRV30E:AEP, UK/TRV70E:AEP, UK)	
	3-798-718-51	MANUAL, INSTRUCTION (ENGLISH, SPANISH) (TRV50E)	
	3-798-718-61	MANUAL, INSTRUCTION (FRENCH, GERMAN) (TRV50E)	
	3-798-718-71	MANUAL, INSTRUCTION (ARABIC) (TRV50E:E)	

Be sure to read "Note on the CCD Imager replacement" on page 4-6 when changing the CCD imager.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
	3-798-718-81	MANUAL, INSTRUCTION (CHINESE, ITALIAN) (TRV50E)	
	3-798-719-11	MANUAL, INSTRUCTION (ENGLISH, SPANISH) (TRV30E:AEP, UK)	
	3-798-719-41	MANUAL, INSTRUCTION (GERMAN, ITALIAN) (TRV30E:AEP)	
	3-798-719-51	MANUAL, INSTRUCTION (FRENCH, DUCHI) (TRV30E:AEP)	
	3-798-719-61	MANUAL, INSTRUCTION (SWEDISH, PORTUGUESE) (TRV30E:AEP)	
	3-798-720-11	MANUAL, INSTRUCTION (ENGLISH, SPANISH) (TRV70E:AEP, UK)	
	3-798-720-41	MANUAL, INSTRUCTION (GERMAN, ITALIAN) (TRV70E:AEP)	
	3-798-720-51	MANUAL, INSTRUCTION (FRENCH, DUCHI) (TRV70E:AEP)	
	3-798-720-61	MANUAL, INSTRUCTION (SWEDISH, PORTUGUESE) (TRV70E:AEP)	
	3-798-740-51	MANUAL, INSTRUCTION (ENGLISH, SPANISH) (TRV30E:AUS, E, HK)	
	3-798-740-61	MANUAL, INSTRUCTION (FRENCH, GERMAN) (TRV30E:E, HK)	
	3-798-740-71	MANUAL, INSTRUCTION (ARABIC) (TRV30E:E)	
	3-798-740-81	MANUAL, INSTRUCTION (CHINESE, ITALIAN) (TRV30E:E, HK)	
	3-798-741-51	MANUAL, INSTRUCTION (ENGLISH, SPANISH) (TRV70E:AUS, E, HK)	
	3-798-741-61	MANUAL, INSTRUCTION (FRENCH, GERMAN) (TRV70E:E, HK)	
	3-798-741-71	MANUAL, INSTRUCTION (ARABIC) (TRV70E:E)	
	3-798-741-81	MANUAL, INSTRUCTION (CHINESE, ITALIAN) (TRV70E:E, HK)	
	3-947-969-21	BELT (S), SHOULDER	
	3-956-563-01	CLEANER, LCD	
*	3-963-567-01	CUSHION, ACC	
*	3-963-568-01	CUSHION (LOWER)	
	3-964-041-01	ADAPTOR, TRIPOD	
*	3-964-101-01	INDIVIDUAL CARTON (TRV70E:AUS, E, HK)	
*	3-964-101-11	INDIVIDUAL CARTON (TRV70E:AEP, UK)	
*	3-964-101-41	INDIVIDUAL CARTON (TRV50E)	
*	3-964-246-01	INDIVIDUAL CARTON (TRV30E:AUS, E, HK)	
*	3-964-246-11	INDIVIDUAL CARTON (TRV30E:AEP, UK)	
	A-7003-927-A	AC-V26 AC POWER ADAPTOR (AEP)	
	A-7003-928-A	AC-V26 AC POWER ADAPTOR (AUS)	
	A-7009-031-A	AC-V26 AC POWER ADAPTOR (HK)	
**	NP-66 BATTERY PACK		

Note.
** MARK PARTS IS AVAILABLE AS AN OPTIONAL ACCESSORY.

****

****
HARDWARE LIST
****

Ref. No.	Part No.	Description	Remark
#1	7-685-103-19	+ PTPWH (2X5)	
#2	7-684-023-04	N 3, TYPE 2 (TRV30E)	
#3	7-624-104-04	STOP RING 2.0, TYPE -E (TRV50E/TRV70E)	
#4	7-627-553-47	PRECISION SCREW + P 2X4 TYPE-3	

SECTION 6
ADJUSTMENTS

6-1. CAMERA SECTION ADJUSTMENTS

When performing adjustments, refer to the layout diagrams for adjustment related parts beginning from page 6-24.

1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

1-1-1. List of Service Tools

- Oscilloscope
- Adjusting driver
- Regulated power supply
- Color monitor
- Vectorscope
- Digital voltmeter

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	ND filter 1.0	J-6080-808-A	White balance check
	ND filter 0.3	J-6080-818-A	White balance check
J-3	Pattern box PTB-450	J-6082-200-A	
J-4	Color chart for pattern box	J-6020-250-A	
J-5	Adjusting remote commander (RM-95-remodeled partly)[Note 1]	J-6082-053-B	
J-6	Siemens star	J-6080-875-A	For checking the flange back
J-7	Extension cable (42P, 0.8 mm)	J-6082-285-A	For extension between the VC board (CN601) and VS board (CN203)
	Extension cable (34P, 0.8 mm)	J-6082-286-A	For extension between the AU board CN302 and VS board (CN202)
J-8	Extension cable (9P, 0.8 mm)	J-6082-288-A	For extension between the control switch block (FK) and VS board (CN502)
J-9	Measuring pin tool for LCD section	J-6082-192-A	For adjusting the LCD section
J-10	Multi CPC jig	J-6082-311-A	For adjusting the LCD section

Note 1: If the micro processor IC in the adjusting remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

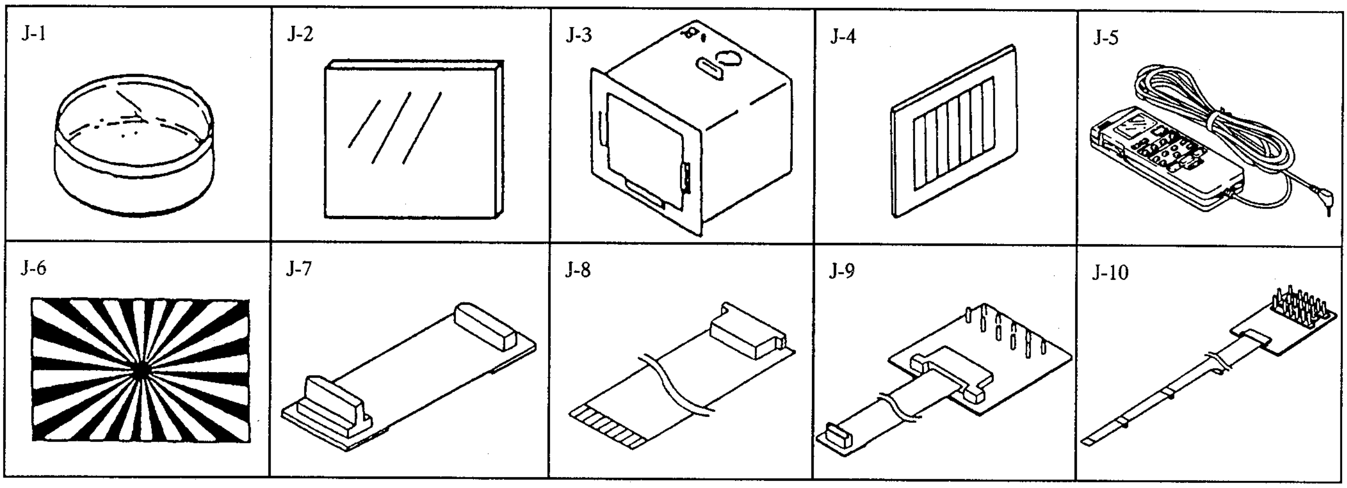


Fig. 6-1-1.

1-1-2. Preparations

Note 1: For further details of how to remove the cabinet and each board, refer to "2. Disassembly".

Note 2: When adjusting only, the lens block and VC board need not be taken apart.

1) Connect the equipments for adjusting as shown in Fig. 6-1-3.
2) The F panel block (MA board and MI board) is not required in adjustments. Remove the following connector.
   1. CN1301 of the AU board
   2. CN510 of the SD-18 board (3" LCD MODEL)
      CN510 of the SD-19 board (4" LCD MODEL)
3) If remove the cabinet (R) (Power switch, camera function switch, speaker, LCD unit and electronic view-finder), set to the camera power supply ON mode (Note 1), and disconnect the following connectors.
   1. CN503 of VS board
   2. CN206 of VS board
   3. CN101 of ZB board
   4. CN902 of DD board

   Be sure to exit this mode after completing the adjustment. (Note 2)
4) HE-20 board is not required in the camera section adjustments. Remove the following connector. (Hi8 model)
   1. CN1101 of HE-20 board.
5) Turning OFF the Auto Focus Using the Adjusting Remote Commander
   1. Set data: 01 to page: 6, address: 25.
      (The auto focus will turn OFF. The focus can be adjusted using the focus button on the adjusting remote commander. But the HOLD switch must be set to OFF.)
   2. After completing the adjustment/operation check, set data: 00 to page: 6, address: 25.
6) Turning OFF the STEADY SHOT Function Using the Adjusting Remote Commander (STEADY SHOT model)
   1. Set data: 02 to page: 6, address: 32.
   2. Set data: 01 to page: 6, address: 33.
      (The STEADY SHOT will go OFF.)
   3. After completing the adjustment/operation check, return the data of address: 32 and address: 33 of page: 6 to 00.

Note 1: Setting the Forced Camera Power Supply ON Mode
1) Set data: 01 to page: 1, address: 00.
2) Set data: 21 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.

By carrying out the above, the camera can be operated even if the cabinet (R) has been removed. Be sure to exit the forced camera power ON mode after completing the adjustment.

Note 2: Exiting the Forced Camera Power Supply ON Mode
1) Set data: 01 to page: 1, address: 00.
2) Set data: 00 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: 1, address: 00.

Note 3: STEADY SHOT model
CCD-TRV40E/TRV50E/TRV70E, FV876
Hi8 model
CCD-TRV60E/TRV70E
DIGITAL ZOOM model
CCD-TRV40E/TRV50E/TRV60E/TRV70E, FV876

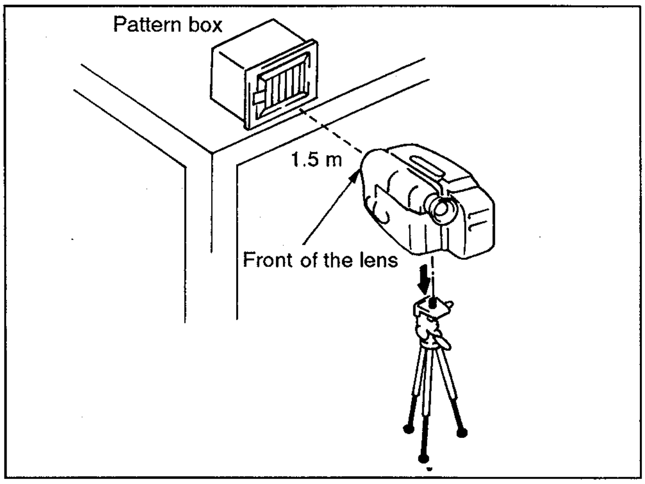


Fig. 6-1-2.

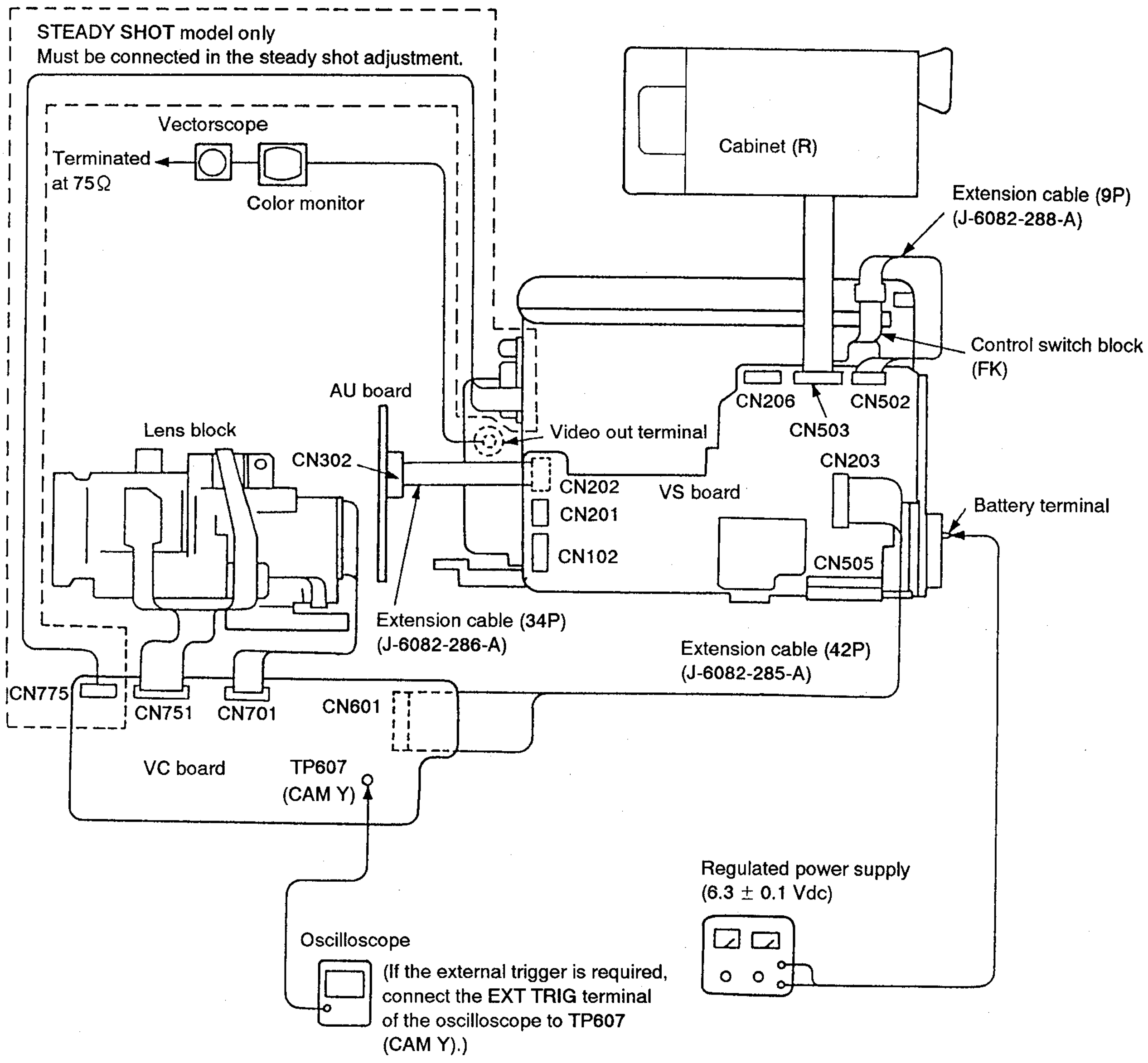

STEADY SHOT model only
Must be connected in the steady shot adjustment.
Vectorscope
Terminated
at 75Ω
Color monitor
Cabinet (R)
Extension cable (9P)
(J-6082-288-A)
Control switch block
(FK)
AU board
CN206
CN502
CN503
Lens block
Video out terminal
CN302
CN203
CN202
VS board
Battery terminal
CN201
CN102
CN505
Extension cable (34P)
(J-6082-286-A)
Extension cable (42P)
(J-6082-285-A)
CN775
CN751
CN701
CN601
VC board
TP607
(CAM Y)
Regulated power supply
(6.3 ± 0.1 Vdc)
Oscilloscope
(If the external trigger is required,
connect the EXT TRIG terminal
of the oscilloscope to TP607
(CAM Y).)

Fig. 6-1-3.

1-1-3. Precautions

1. Switch settings

Adjust the switches to the following positions, and adjust without loading the cassette tape, unless specified otherwise.

1. Camera/VTR power switch (PK board)) ················Camera
2. Standby switch (Control switch block (FK)) ········· Standby
3. PROGRAM AE button (PD board) ··························Off
4. FOCUS switch (PD board)································Manual
5. BACK LIGHT button (PD board)···························Off
6. STEADY SHOT button (PD board)
   (STEADY SHOT MODEL) ································Off
7. PICTURE EFECT button (PD board)·······················Off

2. Adjusting Procedure

Adjust in the given order.

3. Subject

1) Color bar chart (Standard picture frame)
   Adjust the picture frame as shown in Fig. 6-1-4. if adjustments are performed using the color bar chart.
   (Standard picture frame)
2) White pattern (Standard picture frame)
   Remove the color bar chart from the pattern box, and so that the white pattern will be displayed.
   Don't touch the zoom switch.

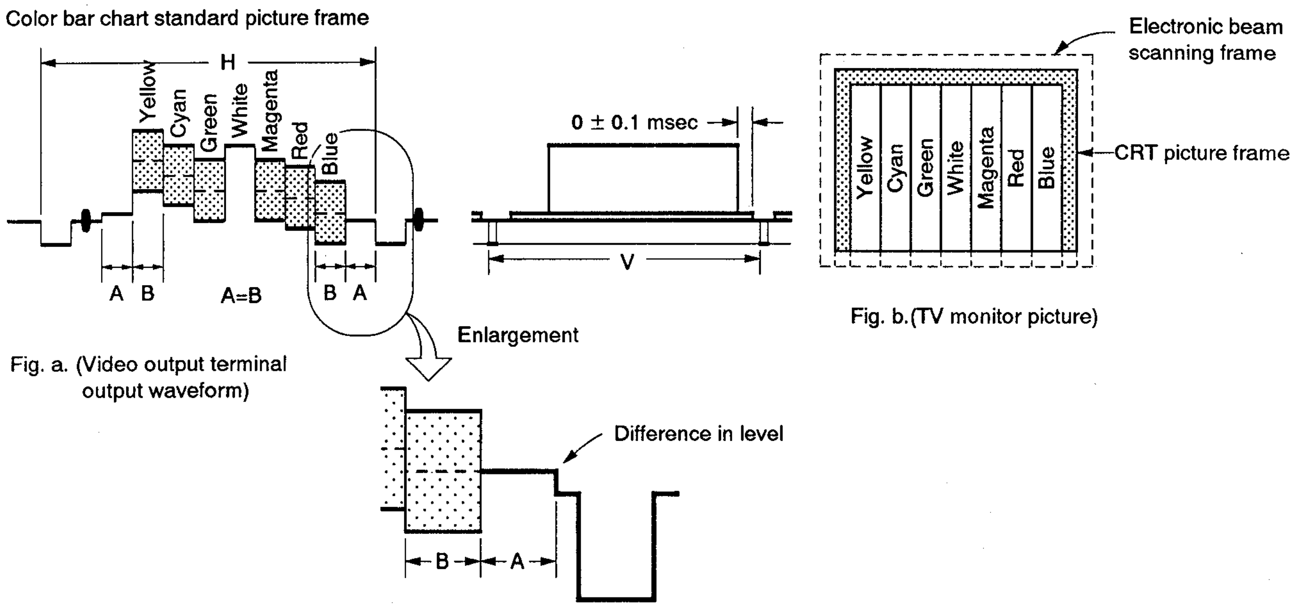

Color bar chart standard picture frame
H
Yellow
Cyan
Green
White
Magenta
Red
Blue
A B
A=B
B A
0 ± 0.1 msec
V
Enlargement
Difference in level
B
A
Electronic beam scanning frame
CRT picture frame
Yellow
Cyan
Green
White
Magenta
Red
Blue

Fig. a. (Video output terminal output waveform)

Fig. b.(TV monitor picture)

Adjust the camera zoom and direction to obtain the output waveform shown in Fig. a and the TV monitor display shown in Fig. b.

Fig. 6-1-4.

3) Chart for flange back adjustment
   Combine a white A0 size (1189 mm× 841 mm) paper to a black one, and make the chart shown in Fig. 6-1-5.

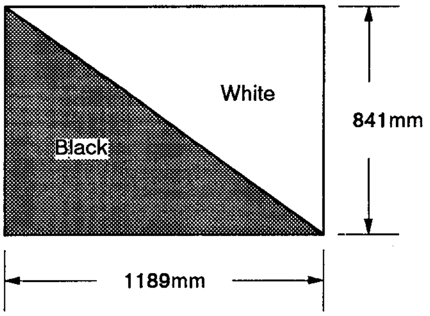

White
Black
841mm
1189mm

Fig. 6-1-5.

Note: Use the non-reflecting and non-glazing vellum paper whose size is more than A0, and make the boundary between white and black to be smoothly flat.

1-1-4. Adjusting Remote Commander

Use the adjusting remote commander to change the coefficient of the digital signal processing or the EVR data.

The adjusting remote commander uses the remote commander signal line (LANC) to perform the bidirectional communication with the camera microprocessor. The effect data of the bidirectional communication must be written in the nonvolatile memory.

1. Using the adjusting remote commander

1) Connect the adjusting remote commander to the remote terminal.
2) Adjust the HOLD switch of the adjusting remote commander to "HOLD" (SERVICE position).

If it has been properly connected, the LCD on the adjusting remote commander will display as shown in Fig. 6-1-6.

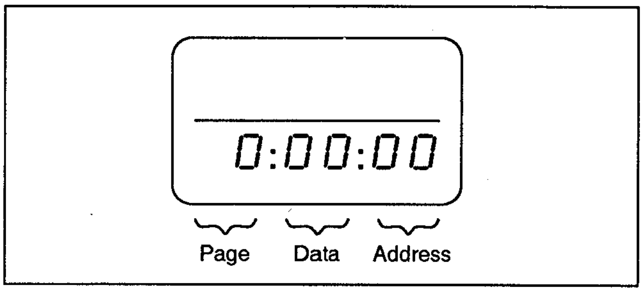


Fig. 6-1-6.

3) Operate the adjusting remote commander as follows.
   - Changing the page
     The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH– button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LCD Display	0	1	2	3	4	5	6	7	8	9	A	b	c	d	E	F
Decimal notation conversion value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Table 6-1-1.

   - Changing the address
     The address increases when the FF (▶▶) button is pressed, and decreases when the REW (◀◀) button is pressed. There are altogether 256 addresses, from 00 to FF.
   - Changing the data (Data setting)
     The data increases when the PLAY (▶) button is pressed, and decreases when the STOP (■) button is pressed.
     There are altogether 256 data, from 00 to FF.
   - Writing the adjustment data
     The PAUSE button must be pressed to write the adjustment data (F page) in the nonvolatile memory.
     (The new adjustment data will not be recorded in the nonvolatile memory if this step is not performed.)

4) Select page: 6, address: 00, and adjust the data to 01. Page F, and enables the camera section (Addresses 01 to BF of page F) to be adjusted.
5) After completing all adjustments, turn off the main power supply (6.3V) once.

2. Precautions upon using the adjusting remote commander

Mishandling of the adjusting remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

1-1-5. Page F Address List

Note 1: The data already listed in the adjustment data memo column are fixed values.

Note 2: The adjustment data initial values are values just after executing "Page F Data Initialization" and "Page F Data Modification". They are different from the values after executing all adjustments.

Note 3: In some cases, data have been input to the page F addresses C0 to FF. This has no relation to the adjustments.

Note 4: ( ) : CCD-TRV30E, FV 836
〈 〉 : Others

Note 5: * 1 Data: 8B (CCD-TRV70E, FV 876)
8D (CCD-TRV60E)
8F (CCD-TRV50E)
91 (CCD-TRV30E, FV 836)
* 2 Data: 40 (CCD-TRV30E, FV 836)
43 (CCD-TRV60E)
47 (CCD-TRV50E/TRV70E, FV 876)
* 3 Data: 75 (CCD-TRV60E/TRV70E, FV 876)
A5 (CCD-TRV30E, FV 836)
B5 (CCD-TRV50E)
* 4 Data: 15 (CCD-TRV30E, FV 836)
12 (CCD-TRV50E/TRV60E/TRV70E, FV 876)
* 5 Data: D8 (CCD-TRV50E)
E0 (CCD-TRV60E/TRV70E, FV 876)
E8 (CCD-TRV30E, FV 836)
* 6 Data: 21 (CCD-TRV50E/TRV70E, FV 876)
27 (CCD-TRV30E/TRV60E, FV 836)
* 7 Data: 5A (CCD-TRV50E/TRV70E, FV 876)
6C (CCD-TRV30E/TRV60E, FV 836)
* 8 Data: 32 (CCD-TRV30E/TRV60E, CCD-TRV70E (AEP, UK), FV 876)
F2 (CCD-TRV50E, CCD-TRV70E (E, AUS, HK))
* 9 Data: 00 (CCD-TRV30E/TRV60E, FV 836)
40 (CCD-TRV50E/TRV70E, FV 876)
* 10 Data: 31 (CCD-TRV50E/TRV70E, FV 876)
33 (CCD-TRV60E)
34 (CCD-TRV30E, FV 836)

Address	**Adjustment data**	
	Initial value	**Memo column**
00 * 1	8B/8D/8F/91	8B/8D/8F/91
01	〈21〉 (23)	〈21〉 (23)
02	00	00
03 * 2	40/43/47	40/43/47
04	80	
05	80	
06	80	
07	80	
08	2D	
09	26	
0A	FA	
0B	F1	
0C	30	
0D	00	
0E	58	
0F	00	
10	E0	E0
11	8F	
12	6C	
13	36	
14	3C	
15	60	
16	0D	
17	A3	
18	12	
19	8E	
1A	10	
1B	E2	
1C	0C	0C
1D	00	00
1E	80	
1F	80	
20	79	79
21	79	79
22	00	00
23	59	59
24	4C	4C
25 * 3	75/A5/B5	75/A5/B5
26	45	45
27	3F	3F
28	〈23〉 (A3)	〈23〉 (A3)
29	0E	0E

Table 6-1-2 (1).

Address	Adjustment data	
	Initial value	**Memo column**
2A	⟨2C⟩ (04)	⟨2C⟩ (04)
2B	58	58
2C	FF	FF
2D	42	42
2E	⟨16⟩ (17)	⟨16⟩ (17)
2F	⟨26⟩ (28)	⟨26⟩ (28)
30	00	00
31	00	00
32	⟨4D⟩ (56)	⟨4D⟩ (56)
33	68	68
34	02	02
35	35	35
36	02	02
37	00	00
38	83	83
39	6A	6A
3A	50	50
3B	20	20
3C	C0	C0
3D	00	00
3E	00	00
3F	00	
40	00	
41	00	
42	00	
43	00	
44	00	
45	00	
46	00	
47	00	
48	00	
49	00	
4A	00	
4B	00	
4C	00	
4D	00	
4E	00	00
4F	00	20
50*4	12/15/22	12/15/22
51	02	02
52	02	66
53	66	18

Table 6-1-2 (2).

Address	Adjustment data	
	Initial value	**Memo column**
54	⟨6B⟩ (66)	⟨6B⟩ (66)
55	9F	9F
56	66	66
57	⟨6C⟩ (66)	⟨6C⟩ (66)
58	⟨5C⟩ (59)	⟨5C⟩ (59)
59	83	83
5A	67	67
5B	5C	5C
5C	5C	5C
5D	4A	4A
5E	⟨20⟩ (1E)	⟨20⟩ (1E)
5F	5C	5C
60	⟨3C⟩ (3A)	⟨3C⟩ (3A)
61	33	33
62	0C	0C
63	26	26
64	24	24
65	02	02
66	04	04
67	05	05
68	00	00
69	00	00
6A	00	00
6B	00	00
6C	00	00
6D	00	00
6E	02	02
6F	33	33
70	B0	B0
71	18	18
72	0F	0F
73	0F	0F
74	02	02
75	63	63
76	1B	1B
77*5	D0/D8/E0/E8	D0/D8/E0/E8
78	A0	A0
79	28	28
7A	0D	0D
7B	50	50
7C	58	58
7D	88	88

Table 6-1-2 (3).

Address	Adjustment data	
	Initial value	Memo column
7E	66	66
7F	46	46
80	8F	8F
81	00	00
82	20	20
83	18	18
84	02	02
85	08	08
86	40	40
87	20	20
88	40	40
89	30	30
8A	50	50
8B	60	60
8C	80	80
8D*6	21/27	21/27
8E*7	5A/6C	5A/6C
8F	00	00
90	00	00
91	77	77
92	00	00
93	FB	FB
94	04	04
95	32	32
96	6B	6B
97	8D	8D
98	A1	A1
99	30	30
9A	30	30
9B	21	21
9C	91	91
9D	72	72
9E	00	00
9F	00	00
A0	00	00
A1	00	00
A2	00	00
A3	00	00
A4	02	02
A5	80	80
A6	00	00
A7	80	80

Table 6-1-2 (4).

Address	Adjustment data	
	Initial value	Memo column
A8	00	00
A9	80	80
AA	00	00
AB	80	80
AC	00	00
AD	00	00
AE	02	02
AF	87	87
B0	39	39
B1	25	25
B2	39	39
B3	25	25
B4*8	32/F2	32/F2
B5	4A	4A
B6*9	40/00	40/00
B7	20	20
B8	00	00
B9	05	05
BA	00	00
BB	20	20
BC	80	80
BD	00	00
BE	⟨6C⟩ (6E)	⟨6C⟩ (6E)
BF*10	31/33/34	31/33/34
C0 to EF		
F0		
F1		
F2		
F3		
F4		
F5		
F6		
F7		
F8		
F9		
FA		
FB		
FC		
FD		
FE		
FF		

Table 6-1-2 (5).

1-1-6. Data Processing

The calculation of the DDS display and the adjusting remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Table 6-1-3. indicates the hexadecimal notation-the decimal notation calculation table.

Hexadecimal notation-Decimal notation

The lower digits of the hexadecimal notation / The upper digits of the hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	② ↓ D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	80	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
① → **B (b)**	176	177	178	179	180	180	182	183	184	185	186	187	188	189	190	191
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Note: ( ) indicate the adjusting remote control unit display.

(Example) In the case that the DDS display and the adjusting remote control unit display are BD (b d).
As the upper digit of the hexadecimal notation is B (b), and the lower digit is D (d), the intersection "189" of the ① and ② in the above table is the decimal notation to be calculated.

Table 6-1-3.

1-2. CAMERA SYSTEM ADJUSTMENT

1. Power Supply Voltage Check (DD board)

Subject	Option
Measuring instrument	Digital voltmeter
D5V check	
Measurement point	Pin ㉓ of CN901
Specified value	4.9 ± 0.1 Vdc
D3.6V check	
Measurement point	Pins ⑮ and ⑯ of CN901
Specified value	3.6 ± 0.1 Vdc
CAM 5V check	
Measurement point	Pins ⑲ and ⑳ of CN901
Specified value	4.85 ± 0.1 Vdc
CAM 15V check	
Measurement point	Pin ㉑ of CN901
Specified value	15 ± 0.3 Vdc
CAM –9V check	
Measurement point	Pin ㉕ of CN901
Specified value	$-8.5^{+0.25}_{-0.4}$ Vdc

Checking method:

1) Check that each power supply voltage satisfies the specified value.

2. Page F Data Initialization

Note: It is necessary to perform all adjustments of the camera section from the beginning again if the data of page F has been initialized.

Initializing method:

1) Set data: 01 to page: 6, address: 00.
2) Check that the data of page: 6, address: 11 is 00.
3) Set data: 2F to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
4) Check that the data of page: 6, address: 11 is 01.
5) Set data: 00 to page: 6, address: 01. and press the PAUSE button of the adjusting remote commander.
6) After performing "Page F data modification", perform all the adjustments of the camera section (page F).

3. Page F Data Modification 1

The data (initial data) that is automatically written on page F after the initialization of the page F data will differ according to some camera micro processor versions. Change the data by manual input, and arrange it.

Note 1: When changing the data, to write the data to the non-volatile memory, press the PAUSE button of the adjusting remote commander every time the new data is set.

Note 2: When changing address: 00, set the data of page: 6, address: 00 to 80.

CCD-TRV30E, FV 836

Address	Data
01	23
03	40
25	A5
28	A3
2A	04
2E	17
2F	28
32	56
50	15
54	66
57	66
58	59
5E	1E
60	3A
77	E8
8D	27
8E	6C
B6	00
BE	6E
BF	34

CCD-TRV70E, FV 876

Address	Data
25	75
2E	18
2F	26
32	4D
8D	21
8E	5A
B4	[F2]
BE	6C
BF	31

[ ]: E, Australian,
Hong Kong model

CCD-TRV50E

Address	Data
2F	26
32	4D
77	D8
8D	21
8E	5A
B4	F2
BE	6C
BF	31

CCD-TRV60E

Address	Data
03	43
25	75
2F	26
32	4D
50	12
77	E0
8D	27
8E	6C
B6	00
BE	6C
BF	33

[Distinguishing the Camera Micro Processor (VC Board IC602) Versions]

Each version can be distinguished by looking at the part name of the camera micro processor or the data of page: 6, address: 10.

Version	Part Name	Page: 6 Address: 10
Ver.2.0	SC424611	20
Ver.3.0	SC424618	30

[Distinguishing the Steady Shot Control Micro Processor (VC Board IC778) Versions] (STEADY SHOT MODEL)

Each version can be distinguished by looking at the part name of the steady shot control micro processor or the data of page: 6, address: 30.

Version	Part Name	Page: 6 Address: 30
Ver.1.0	CXP81120-003R	10

4. Page F Data Modification 2

Change the data of page: F, address: 2B and 34 according to the type of IC.

Changing Method:

1) Set data: 01 to page: 6, address: 00.
2) Set data: 16 to page: 6, address: 02.
3) Select page: A.
4) Read the data displayed on the adjusting remote commander (4 digits) and take the second number as X. (A: _ _*X _)
5) Select page F, and input data as shown in the following table.
   Note: To write in EEPROM, press the PAUSE button of the adjusting remote commander each time the data set.

- CCD-TRV40E/TRV50E/TRV60E/TRV70E, FV 876

	Page	Address	Data
When X=9	F	2B	50
When X=Aor B	F	2B	58

- CCD-TRV30E, FV 836

	Page	Address	Data
When X=9	F	2B	58
	F	34	00
When X=B	F	2B	50
	F	34	02

5. 28 MHz Original Oscillation Adjustment (VC board)

Adjust the 28 MHz oscillation of the synchronization clock.
If the oscillation is not 28 MHz, the period will be inaccurate or the image will not be in color.

Subject	Not required
Measurement Point	TP709 (CL)
Measuring Instrument	Frequency counter
Adjusting Element	CT701
Specified Value	14187500 ± 70 Hz

Adjusting method:

1) Use CT701 to adjust the oscillation frequency to 14187500 ± 70 Hz.

6. V SUB Adjustment

Set the CCD imager V SUB voltage to the voltage specified for the imager.

Subject	Not required
Adjustment Page	F
Adjustment Address	04

Adjusting Method:

1) Read the V SUB voltage code of the CCD imager.
   Obtain the corresponding V SUB data from the following table.
2) Set data: 01 to page: 6, address: 00.
3) Set the V SUB data to page: F, address: 04.
4) Press the PAUSE button of the adjusting remote commander.

V SUB			V SUB		
Voltage Code	Data	Voltagee (Vdc) *1	Voltage Code	Data	Voltagee (Vdc) *1
e	71	9.0	q	AD	14.0
f	77	9.5	r	B3	14.5
g	7D	10.0	s	B9	15.0
h	83	10.5	t	BF	15.5
j	89	11.0	u	C5	16.0
k	8F	11.5	v	CB	16.5
l	95	12.0	w	D1	17.0
m	9B	12.5	x	D7	17.5
n	A1	13.0	y	DD	18.0
p	A7	13.5	z	E3	18.5

*1: The V SUB voltages (TP703) given are reference values.

7. VRG Adjustment

Set the CCD imager V RG voltage to the voltage specified for the imager.

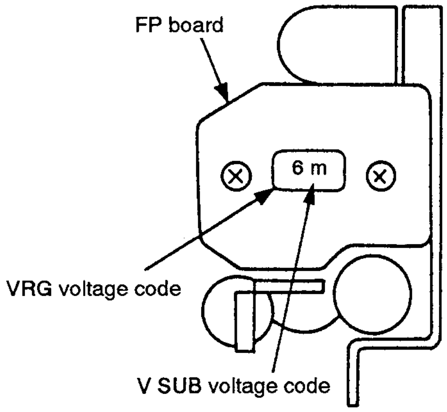
Subject	Not required
Adjustment Page	F
Adjustment Address	05

Adjusting Method:

1) Read the VRG voltage code of the CCD imager.
   Obtain the corresponding VRG data from the following table.
2) Set data: 01 to page: 6, address: 00.
3) Set the VRG data to page: F, address: 05.
4) Press the PAUSE button of the adjusting remote commander.

VRG		
Voltage Code	Data	Voltage (Vdc) *2
1	34	1.0
2	4E	1.5
3	69	2.0
4	83	2.5
5	9E	3.0
6	B8	3.5
7	D3	4.0

*2: The VRG voltages (TP707) given are reference values.



(Example) When "6m" is displayed:
The V SUB voltage code is "m" and therefore the V SUB data will be "9B".
The VRG voltage code is "6" and therefore the VRG data will be "B8".

Fig. 6-1-7.

8. Flange Back Adjustment

The flange back adjustment for the inner focus lens is performed automatically.

Subject	Chart for flange back adjustment (2000 ± 5 mm from the front side of the lens Luminance: 300 ± 50 lux)
Measurement Point	Check the operations on the TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	16, 17, 18, 19, 1A, 1B

Adjusting method:

1) Check that the flange back adjustment chart center and the exposure display center coincide at both zoom lens TELE end and WIDE end.
2) Set data: 01 to page: 6, address: 00.
3) For STEADY SHOT model and DIGITAL ZOOM model.
   Set data: 02 to page: 6, address: 32.
   Set data: 01 to page: 6, address: 33.
4) Check that the data of page: 6, address: 21 is 00.
5) Check that the page: F, address: 16 to 1B data is at the initial value. (Refer to Table 6-1-2. "Page F address list")
6) Set data: 13 to page: 6, address: 01 and press the PAUSE button of the adjusting remote commander.
7) Set data: 15 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
   (The adjustment data is automatically input to page: F, addresses: 16 to 1B.)
8) Check that the data of page: 6, address: 21 is 01.
   (Display indicating flange back adjustment completion)

Processing after completing adjustments

1) Turn off the main power supply (6.3V).

9. Flange Back Check

Subject	Siemens star (2m from the front of the lens)
Measurement Point	DDS display of EVF or TV monitor
Measuring Instrument	
Specified Value	Focused at the TELE end and WIDE end.

Checking method:

1) Place the Siemens star 2m from the front of the lens.
2) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appears on the image.
3) Shoot the siemens star with the zoom TELE end.
4) Turn ON the auto focus.
5) When the lens is focused, turn OFF the auto focus. (Note 2)
6) Shoot the siemens star with the zoom WIDE end.
7) Check that the lens is focused.

Note 1: Input the following data for STEADY SHOT model and DIGITAL ZOOM model.
1) Set data: 02 to page: 6, address: 32.
2) Set data: 01 to page: 6, address: 33.

Note 2: When the auto focus is ON, the lens can be checked if it is focused or not by observing the data on page A of the adjusting remote commander.
1) Set data: 0C to page: 6, address: 02.
2) Page A shows the state of the focus.

A : 00 : XX → (Odd: Focused
Even: Unfocused)

Note 3: Turn off the auto focus using the adjusting remote commander.
1) Set data: 01 to page: 6, address: 25.
2) After adjustment, set data: 00 to page: 6, address: 25.

Processing after compleating adjustments

1) Set data: 00 to page: 6, address: 02.

For STEADY SHOT model and DIGITAL ZOOM model.

2) Set data: 00 to page: 6, address: 32.
3) Set data: 00 to page: 6, address: 33.

10. HALL Adjustment

To eliminate the differences in the outputs of the hall element attached to the iris for detecting the position of the lens iris, adjust the hall AMP gain and hall offset.

Subject	Not required
Measurement Point	DDS display of EVF or TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	06, 07
Specified Value	33 to 37 during IRIS OPEN B4 to B8 during IRIS CLOSE

Adjusting method:

1) Set data: 01 to page: 6, address: 00.
2) Set data: 01 to page: 1, address: 00.
3) Set data: 21 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
4) Set data: 03 to page: 6, address: 02.
5) Set data: 03 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 80 to page: F, address: 07, and press the PAUSE button of the adjusting remote commander.
7) Set data: 40 to page: F, address: 06, and press the PAUSE button of the adjusting remote commander.
8) Read the DDS display data (the bottom two digits of the display data at the bottom right of the EVF or the monitor TV display), and this data is named W_2.
9) Set data: 30 to page: F, address: 06, and press the PAUSE button of the adjusting remote commander.
10) Read the DDS display data, and this data is named W_1.
11) Set data: 01 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
12) Read the DDS display data, and this data is named K_1.
13) Set data: 40 to page: F, address: 06, and press the PAUSE button.
14) Read the DDS display data, and this data is named K_2.
15) Convert W_1, W_2, K_1, K_2 to decimal notation, and obtain W_1', W_2', K_1', K_2'. (Refer to Table 6-1-3. "Hexadecimal notation-decimal notation conversion table".)
16) Calculate X_1' using the following equations (decimal notation calculation).
    $A'=W_2'+K_1'-W_1'-K_2'$ ……………………Equation 1
    $B'=W_1'-K_1'$ ……………………………………Equation 2
    $X_1'=\dfrac{2080+(48\times A')-(16\times B')}{A'}$ ………………Equation 3
17) Convert X_1' to hexadecimal notation, and obtain X_1. (Round off to one decimal place)
18) Set data: X_1 to page: F, address: 06, and press the PAUSE button of the adjusting remote commander.
19) Change the data of page: F, address: 07, and adjust the DDS display data to "35".
20) Press the PAUSE button of the adjusting remote commander.
21) Set data: 03 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
22) Read the DDS display data, and this data is named W_0. If W_0 lies within the "B4" to "B8" range, perform "Processing after completing adjustments". If it lies outside the range, perform the following adjustments.
23) Convert W_0 to hexadecimal notation, and obtain W_0'.
24) Calculate X_2' using the following equations (decimal notation calculation).
    $C'=W_0'-B'-52$ ………………………………Equation 4
    $X_2'=\dfrac{(130-B')\times(X_1'-48)+48\times C'}{C'}$ …………Equation 5
    (X_1' and B' are values obtained from equations 2 and3)
25) Convert X_2' to hexadecimal notation and obtain X_2. (Round off to one decimal place)
26) Set data X_2 to page: F, address: 06, and press the PAUSE button of the adjusting remote commander.
27) Change the data of page: F, address: 07, and adjust the DDS display data to "B6".
28) Press the PAUSE button of the adjusting remote commander.
29) Set data: 01 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
30) Check that the DDS display data lies within the "33" to "37" range.

Processing after Completing Adjustments

1) Set data: 00 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
2) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: 1, address: 00.

11. Picture Frame Setting

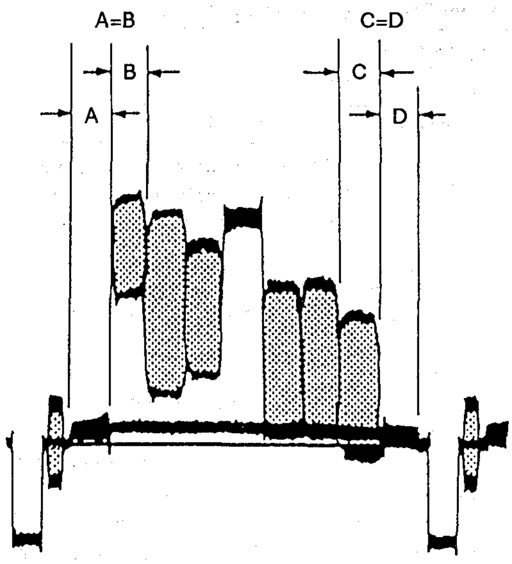
Subject	Color bar chart standard picture frame
Measurement Point	Video output terminal
Measuring Instrument	Oscilloscope and TV monitor.
Specified Value	A=B, C=D, t=0 ± 0.1 msec

Setting method:

1) Turn the auto focus off.
2) Adjust the focus.
3) Adjust the zoom and the camera direction, and set to the specified position.
4) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using "color bar chart standard picture frame".

Check on the oscilloscope

1. horizontal period



2. Vertical period

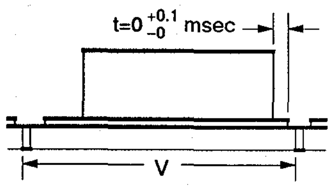


Fig. 6-1-8.

Check on the TV monitor

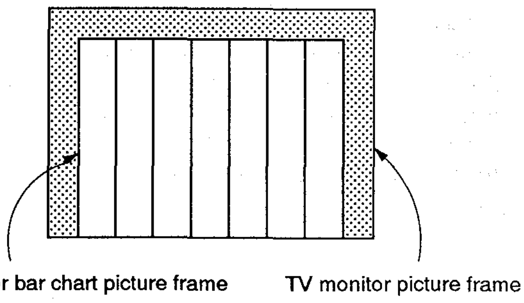


Fig. 6-1-9.

12. Color Reproduction Adjustment

Adjust the color separation matrix coefficient so that the proper color reproduction is produced.

Subject	Color bar chart standard picture frame
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	F
Adjustment Address	08, 09, 0A, 0B
Specified Value	All color luminance points should settle within each color reproduction frame.

Adjusting method:

1) Set data: 01 to page: 6, address: 00.
2) For STEADY SHOT model, set data: 02 to page: 6, address: 32.
3) Set data: 00 to page: 6, address: 03.
4) Set data: F1 to page: F, address: 10, and press the PAUSE button of the adjusting remote commander.
5) Set data F6 to page: F, address: 63, and press the PAUSE button of the adjusting remote commander.
6) Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame.
7) Change the data of addresses 08, 09, 0A and 0B of page: F, and settle each color luminance point in each color reproduction frame.

   Note 1: Be sure to press the PAUSE button of the adjusting remote commander before changing the addresses.

   If not, the new data will not be written to the memory.
8) Press the PAUSE button of the adjusting remote commander.

Processing after completing adjustments

1) Set data: E0 to page: F, address: 10 and press the PAUSE button of the adjusting remote commander.
2) Set data: 26 to page: F, address 63 and press the PAUSE button of the adjusting remote commander.
3) Set data: 10 to page: 6, address: 03.
4) For STEADY SHOT model, set data: 00 to page: 6, address: 32.

For CCD (510) model

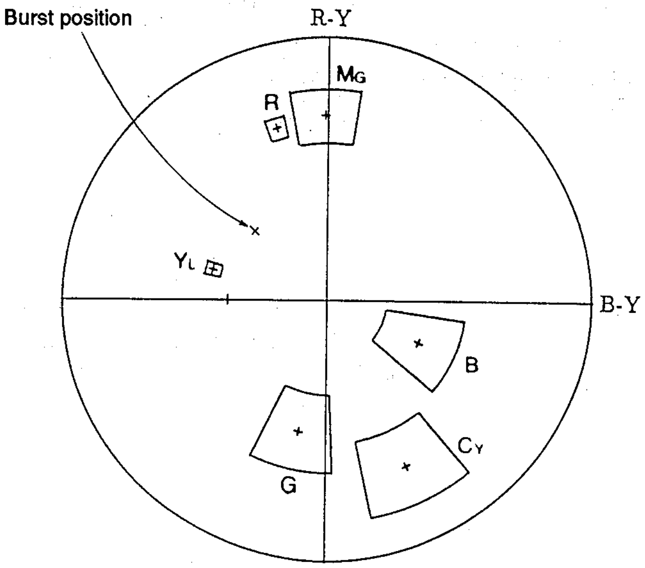


Fig. 6-1-10.

For CCD (760) model

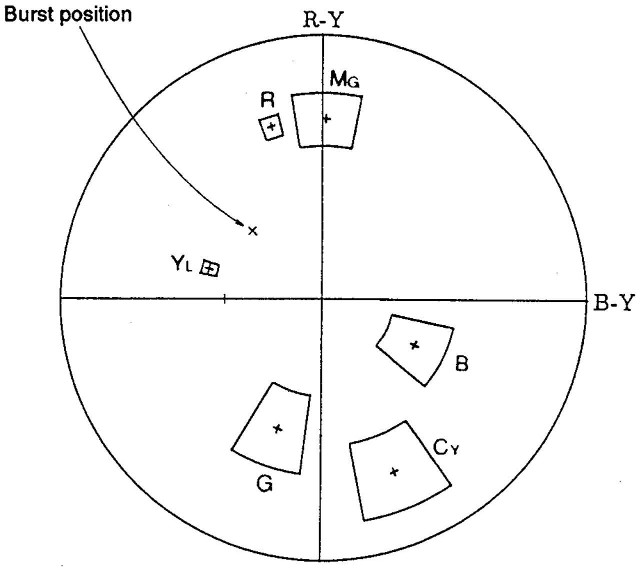


Fig. 6-1-11.

13. IRIS IN/OUT Adjustment (VC board)

For the unit to judge if the white balance is indoors or outdoors in auto white balance operations, measure the light level and write it in the EEPROM.
If the level is not correct, the white balance will not be accurate.

Subject	White pattern
Measurement Point	DDS display of EVF or TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	13, 14

Adjusting method:

1) Set data: 01 to page: 6, address: 00.
2) Set data: 01 to page: 1, address: 00.
3) Set data: 21 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
4) Set data: 0E to page: 6, address: 02.
5) Set data: 0B to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Read the DDS display data (Note 1), and take the upper two digits as D_1 and the lower two as D_2.
7) Convert D_1 to a decimal number and obtain D_1'. (Refer to Table 6-1-3. "Hexadecimal Notation-Decimal Notation Conversion Table".)
8) Calculate D_3' using the following equations. (Equations 1 and 2 are for decimal notation calculation)
   When $D_2 \geqq D0$
   $D_3'=D_1'-21$ ··································Equation 1
   When $D_2 < D0$
   $D_3'=D_1'-22$ ··································Equation 2
9) Convert D_3' to a hexadecimal number and obtain D_3.
10) Set D_3 to page: F, address: 13, and press the PAUSE button of the adjusting remote commander.
11) Set data: 09 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
    (IND0.5 SHUTTER mode setting)
12) Read the DDS display data (Note 1), and take the upper two digits as D_4 and the lower two as D_5.
13) Convert D_4 to a decimal number and obtain D_4'. (Refer to Table 6-1-3. "Hexadecimal Notation-Decimal Notation Conversion Table".)
14) Calculate D_6' using the following equations. (Equations 3 and 4 are for decimal notation calculation)
    When $D_5 \geqq F0$
    $D_6'=D_4'-13$ ······································Equation 3
    When $D_5 < F0$
    $D_6'=D_4'-14$ ······································Equation 4
15) Convert D_6' to a hexadecimal number and obtain D_6.
16) Set D_6 to page: F, address: 14, and press the PAUSE button of the adjusting remote commander.

Note 1: The right four digits of the display data at the right bottom side of the EVF and monitor TV is the LIGHT LEVEL data. If the lower digits change severely and cannot be read, record it on a tape once, play it back by frame feeding, and obtain the average value.

Processing after Completing Adjustments

1) Set data: 00 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
2) Set data: 00 to page: 1, address: 00.
3) Set data: 00 to page: 6, address: 00, and press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 6, address: 02.

14. MAX GAIN Adjustment (VC board)

Correct the differences in the minimum illuminance.
If the illuminance is not consistent, the image level required for taking subjects in low illuminance will not be produced (dark).

Subject	White pattern standard picture frame
Measurement Point	Video output terminal (Terminated at 75Ω)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	15
Specified Value	CCD-TRV30E, FV 836 A=610 ± 10 mV CCD-TRV60E A=460 ± 10 mV CCD-TRV40E/TRV50E/TRV70E, FV 876 A=390 ± 10 mV

Adjusting method:

1) Set data: 01 to page: 6, address: 00.
2) Set data: 02 to page: F, address: 2D, and press the PAUSE button of the adjusting remote commander.
3) Set data: 19 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
4) Change the data of page: F, address: 15, and adjust so that the signal level (A) becomes the specified value.
5) Press the PAUSE button of the adjusting remote commander.

Processing after completing adjustments

1) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
2) Set data: 42 to page: F, address: 2D, and press the PAUSE button of the adjusting remote commander.

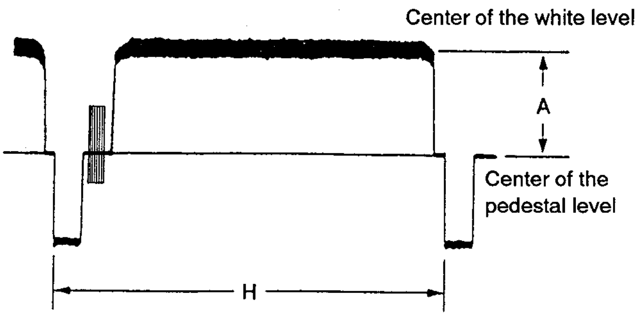


Fig. 6-1-12.

15. Auto White Balance Standard Data Input

Subject	White pattern standard picture frame
Adjustment Page	F
Adjustment Address	0C, 0D, 0E, 0F

Adjusting method:
1) Turn the power of the unit OFF/ON.
2) Set data: 01 to page: 6, address: 00.
3) Check that the data of page: 6, address: 11 is 00.
4) Wait for 2 seconds.
5) Set data: 11 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 0D to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
   (When the standard data is taken in, the data will be automatically input to addresses 0C to 0F of page F.)
7) Check that the data of page: 6, address: 11 is 01.

Processing after completing adjustments
1) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.

16. Auto White Balance Adjustment

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

Subject	White pattern standard picture frame
Filter	Filter C14 for color temperature correction
Measurement Point	Check with the DDS display on the EVF or TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	11, 12
Specified Value	CCD-TRV30E, FV 836 R ratio: 2A40 to 2AC0 B ratio: 5E00 to 5F00 CCD-TRV40E/TRV50E/TRV60E TRV70E, FV 876 R ratio: 2B40 to 2BC0 B ratio: 5E00 to 5F00

Adjusting method:
1) Place the C14 filter for color temperature correction on the lens.
2) Set data: 01 to page: 6, address: 00.
3) Set data: 21 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
4) Set data: 01 to page: 6, address: 00.
5) Set data: D0 to page: F, address: 10, and press the PAUSE button of the adjusting remote commander.
6) Set data: 04 to page: 6, address: 02.
7) Change the data of page: F, address: 11, and adjust the average value of the DDS display data (the display data at the bottom right of the EVF or the TV monitor) to the R ratio specified value.
8) Press the PAUSE button of the adjusting remote commander.
9) Set data: 05 to page: 6, address: 02.
10) Change the data of page: F, address: 12, and adjust the average value of the DDS display data to the B ratio specified value.
11) Press the PAUSE button of the adjusting remote commander.

Processing after completing adjustments
1) Set data: E0 to page: F, address: 10, and press the PAUSE button of the adjusting remote commander.
2) Set data: 00 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: 6, address: 02.
4) Set data: 00 to page: 1, address: 00.

17. White Balance Check

Subject	White pattern standard picture frame
Filter	Filter C14 for color temperature correction ND filter 1.0 and 0.3
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Specified Value	Fig. 6-1-13. A to C

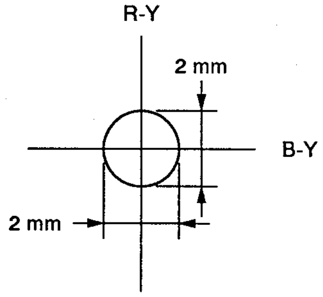


Fig. 6-1-13. A

Checking method:
1) Check that the lens is not covered with either filter.
2) Set data: 01 to page: 6, address: 00.
3) Set data: 0F to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
4) Check that the center of the white luminance point is within the circle shown in Fig. 6-1-13.A.
5) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 23 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
7) Place the C14 filter on the lens.
8) Check that the center of the white luminance point settles in the circle shown in Fig. 6-1-13. B.
9) Remove the C14 filter, and place the ND filter 1.3 (1.0+0.3) on the lens.
10) Check that the center of the white luminance point settles in the circle shown in Fig. 6-1-13. C.

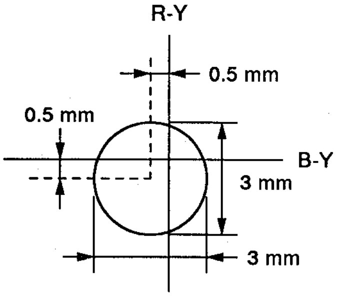


Fig. 6-1-13. B

Processing after completing adjustments
1) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
2) Set data: 00 to page: 6, address: 00, and press the PAUSE button.

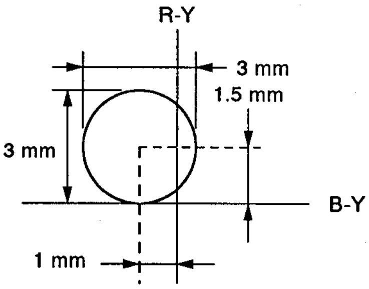


Fig. 6-1-13. C

18. VIDEO OUT Level Check

Subject	Color bar chart standard picture frame
Measurement Point	Video output terminal (Terminated at 75 Ω)
Measuring Instrument	Oscilloscope
Specified Value	Y level=660 ± 40 mV SYNC level=300 ± 20 mV BURST level=300 ± 20 mV

Checking method:

1) Check that the Y level, SYNC level and BURST level satisfy the specified values.

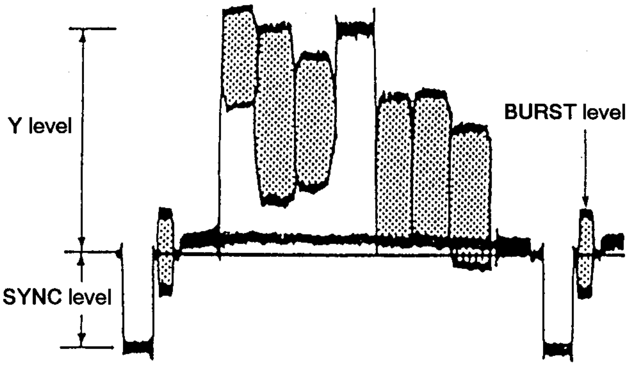


Fig. 6-1-14.

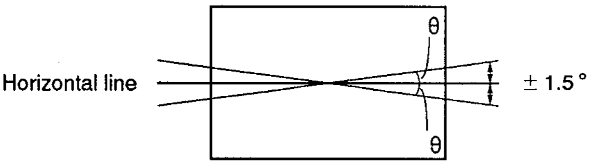
1-3. ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENTS

1-3-1. Horizontal Slant Adjustment

Model	Playback
Signal	Alignment tape: For checking operations (WR5-5CSP) Monoscope section
Specified Value	± 1.5°

Adjusting method:

1) Adjust RV904 (BRIGHT) so that the CRT can be seen easily and clearly.
2) Loosen the DY (deflection yoke) tightening screw.
3) Rotate DY, and adjust the image so that it is horizontal.
4) Tighten the DY tightening nut.
   (Do not tighten it too tightly.)


θ
Horizontal line
± 1.5°
θ

Specified value: The image should be within ± 1.5° of the horizontal line.

Fig. 6-1-15.

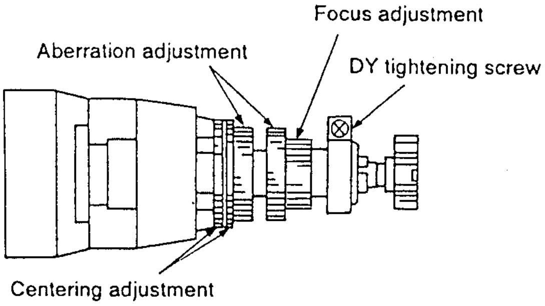

Focus adjustment
Aberration adjustment
DY tightening screw
Centering adjustment

Fig. 6-1-16.

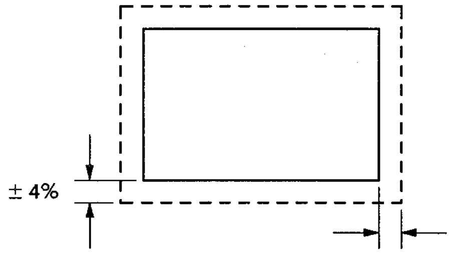
1-3-2. Centering Adjustment

Model	Playback
Signal	Alignment tape: For checking operations (WR5-5CSP) Monoscope section
Specified Value	± 4%

Adjusting method:

1) Use the centering adjustment ring and adjust so that the left, right, top, and bottom sides of the display are uniform. (Refer to Fig. 6-1-16.)

   Note: As the centering position changes due to earth magnetism, rotate it 360 ° in the horizontal direction, and adjust with the center section of the modifying position.



Adjustment value: ± 4%

Fig. 6-1-17.

1-3-3. Focus Adjustment

Model	Playback
Signal	Alignment tape: For checking operations (WR5-5CSP) Monoscope section

Adjusting method:

1) Adjust the focus ring to obtain the optimum focus. (Refer to Fig. 6-1-16.)

1-3-4. Aberration Adjustment

Model	E-E
Signal	Dot pattern
Specified Value	$T < 2 \cdot D$, $F < D$

Adjusting method:

1) Adjust the aberration adjustment ring so that the tracing of the dot becomes less than twice the diameter of the dot, or the fan aberration becomes less than the diameter of the dot.
2) If the centering becomes displaced here, perform the centering adjustment from the beginning again.

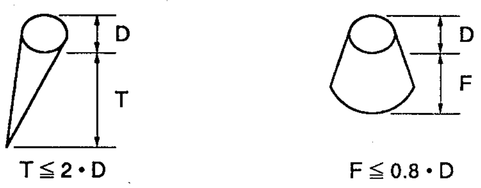


Fig. 6-1-18.

1-3-5. Horizontal Amplitude Adjustment (VF-82/85 board)

Model	Playback
Signal	Alignment tape: For checking operations (WR5-5CSP) Monoscope section
Adjusting Element	C909
Specified Value	6 ± 3%

Adjusting method:

1) Rotate RV903, and adjust the top and bottom sides of the monoscope image to the top and bottom edges of the display.
2) Rotate RV904 so that the brightness is the normal level.
3) Adjust the pattern (A) of the H size adjustment capacitor (C909) to "short" or "open", so that the horizontal direction over scan becomes 6 ± 3% (Left and right totals). (Refer to Fig. 6-1-20.)

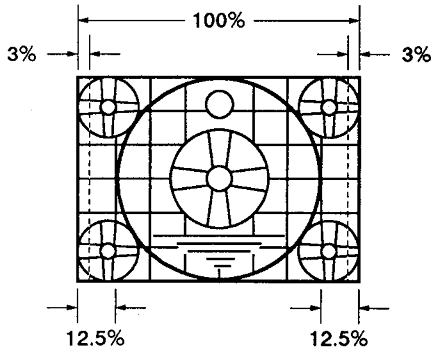
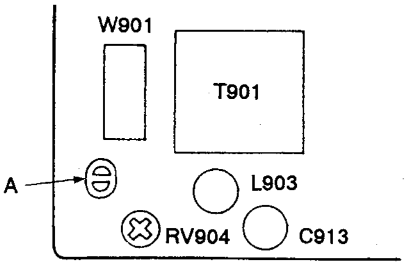
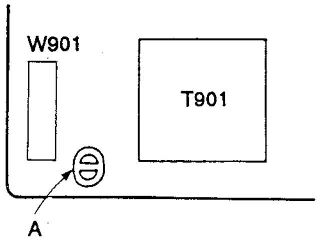


Fig. 6-1-19.



VF-82 board (Component side)



VF-85 board (Component side)

Section A	Size H
Open	Small
Short	Big

Fig. 6-1-20.

1-3-6. Vertical Amplitude Adjustment (VF-82/85 board)

Model	Playback
Signal	Alignment tape: For checking operations (WR5-5CSP) Monoscope section
Adjusting Element	RV903
Specified Value	6 ± 3%

Adjusting method:

1) Adjust RV903 so that the vertical direction over scan becomes 6 ± 3% (Top and bottom totals).

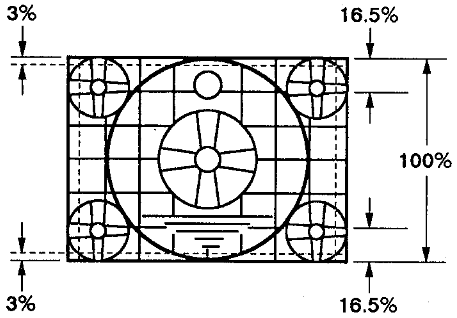


Fig. 6-1-21.

1-3-7. Brightness Adjustments (VF-82/85 board)

Model	Playback
Signal	Alignment tape: For checking operations (WR5-5CSP) Monoscope section
Adjusting Element	RV904

Adjusting method:

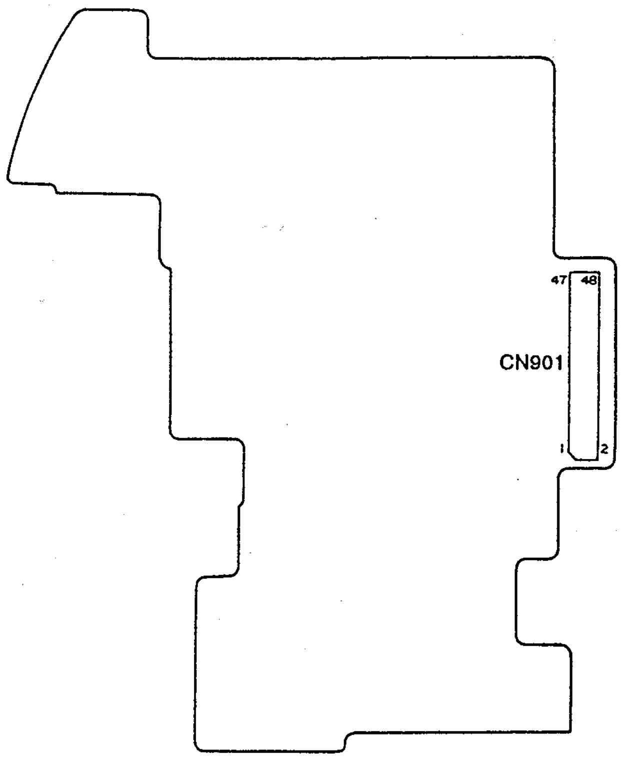
1) Rotate RV904, and adjust so that the bright/dark sections of the gray scale are displayed correctly. (The bright section should be unsatisfactory till the cross hatch appears vague in the monoscope circle. The dark section should be unsatisfactory till the darkest section and the second darkest section of the gray scale cannot be differentiated.)

1-3-8. Horizontal Amplitude, Vertical Amplitude, Focus Check

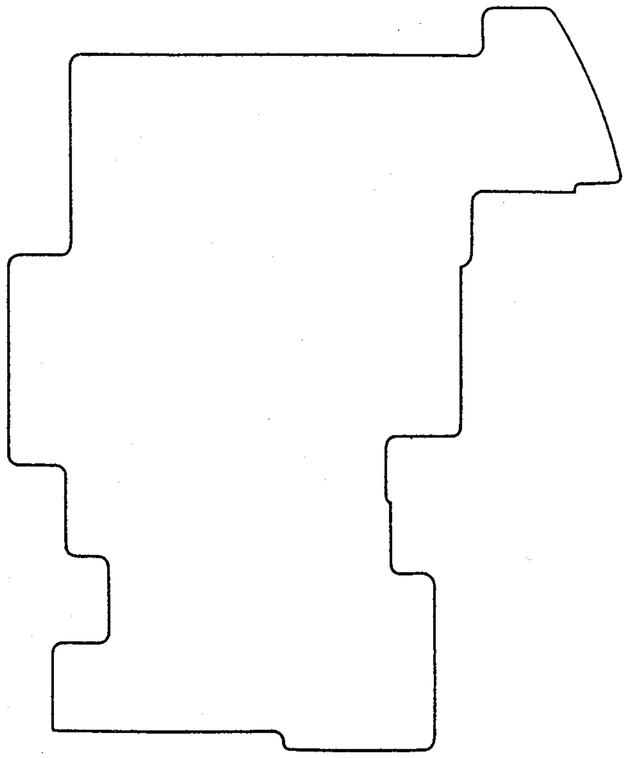
"1-3-5. Horizontal Amplitude Adjustment" and "1-3-6. Vertical Amplitude Adjustment" should both satisfy the specified values. If not, perform the adjustments from the beginning again. In this case, perform [1-3-7. Brightness, Contrast Adjustments] again. Moreover, check the focus, and if it found to be vague, perform "1-3-3. Focus Adjustment" and "1-3-4. Aberration Adjustment".

1-4. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

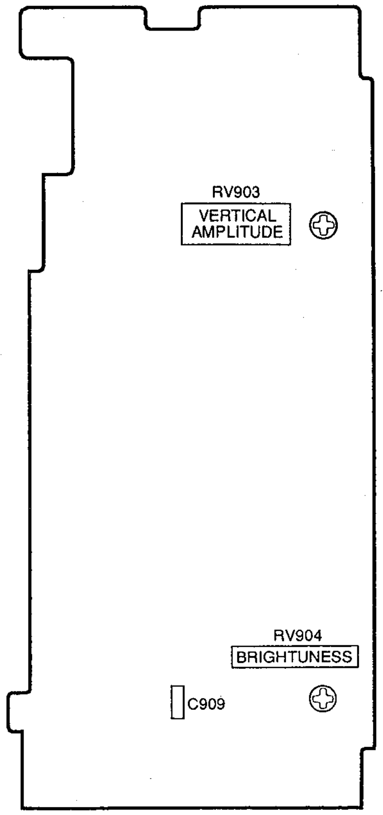
DD-79 BOARD (COMPONENT SIDE)


47
48
CN901
1
2

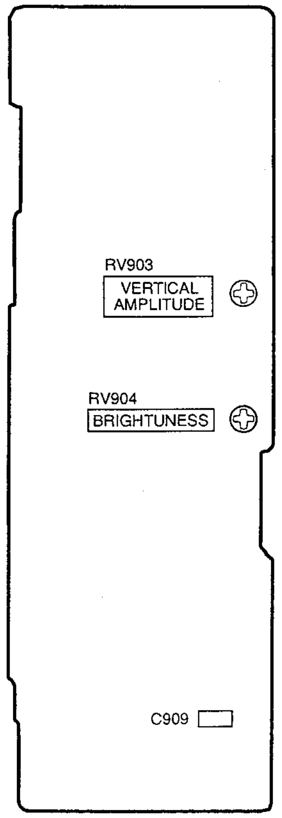
DD-79 BOARD (CONDUCTOR SIDE)



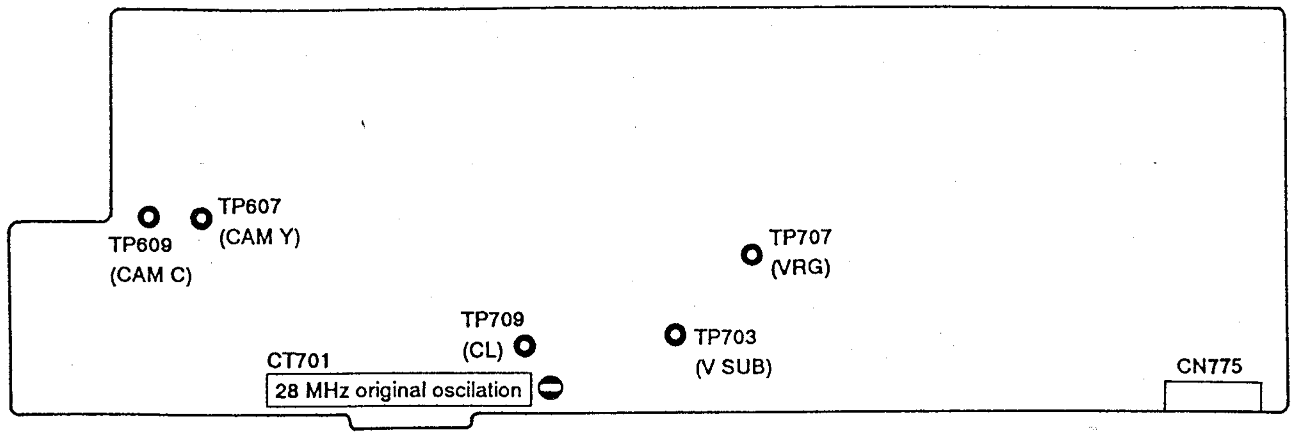
VF-82 BOARD (COMPONENT SIDE)


RV903
VERTICAL AMPLITUDE
RV904
BRIGHTUNESS
C909

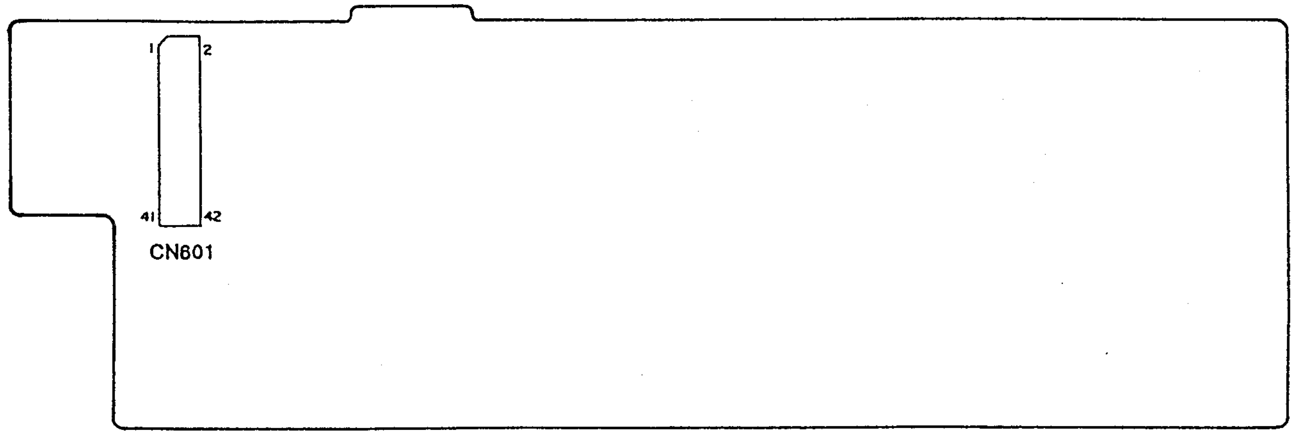
VF-85 BOARD (COMPONENT SIDE)


RV903
VERTICAL AMPLITUDE
RV904
BRIGHTUNESS
C909

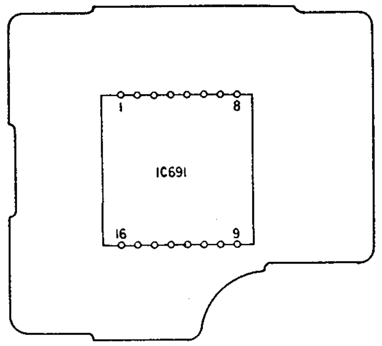
VC-163 BOARD (COMPONENT SIDE)


TP607
(CAM Y)
TP609
(CAM C)
TP707
(VRG)
TP709
(CL)
TP703
(V SUB)
CT701
28 MHz original oscilation
CN775

VC-163 BOARD (CONDUCTOR SIDE)


1
2
41
42
CN601

CD-137 BOARD


1
8
IC691
16
9

6-2. MECHANICAL SECTION ADJUSTMENTS

Mechanism Parts Adjustments

For details on the adjustments and checks of mechanical section and replacements of mechanism parts, refer to the separate volume-"8 mm Video Mechanism Adjustment Manual Ⅳ A Mechanism".

2-1. OPERATING WITHOUT A CASSETTE

1) Refer to "2. DISASSEMBLY" and supply the power with the cabinet removed. (So that the mechanical deck can be operated.)
2) Connect the adjusting remote commander to the remote terminal.
3) Turn on the HOLD switch of the adjusting remote commander.
4) Close the cassette compartment without loading a cassette and complete loading.
5) Set data: 01 to page: 1, address: 00.
6) Set data: 01 to page: D, address: 02, and press the PAUSE button of the adjusting remote commander.
7) Set data: 04 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.

By carrying out the above procedure, the unit can be operated without loading a cassette.
Be sure to carry out "Processing after Operations" after checking the operations.
Set the data of page: D, address: 03 to the following if the sensor ineffective mode, forced VTR power supply ON mode or forced camera power supply ON mode are to be used together.

Forced VTR power supply ON mode········· 06
Forced camera power supply ON mode······ 05

[Processing after Operations]

1) Set data: 01 to page: 1, address: 00.
2) Set data: 00 to page D, address: 02, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 1, address: 00.
5) Disconnect the power supply of the unit.

2-2. TAPE PATH ADJUSTMENT

1. Preparations for adjustments

1) Clean the tape path face (tape guide, drum, capstan shaft, pinch roller).
2) Connect the adjusting remote commander to the remote terminal.
3) Turn on the HOLD switch of the adjusting remote commander.
4) Select page: 1, address: 00, and set data: 01.
5) Select page: D, address: 01, and set data: 03.
   (Set the track shift mode. The adjusting remote commander can be disconnected if its PAUSE button of remote commander is pressed. In this case, be sure to perform "Processing after operations" after completing adjustments.)
6) Connect the oscilloscope.
   Channel 1-Pin ③ of CN102 of VS board
   External trigger-Pin ④ of CN102 of VS board
   (Connect the oscilloscope via the measuring pin tool for the video section (J-6082-140-A).)
7) Playback the alignment tape (WR5-1CP) for tracking.
8) Check that the RF waveform of the oscilloscope is flat at both the entrance and the exit.
   If not flat, perform necessary adjustment according to the separate 8 mm Video Mechanical Adjustment Manual Ⅳ (A Mechanism).
9) Perform "Processing after operations", after completing adjustments.

CN102 of VS board

1	PB ´CH RF
2	PB PCM RF
3	PB RF
4	RF SWP
5	RP GND
6	REC 2

〔Processing after operations〕

1) Connect the adjusting remote commander, and turn on the HOLD switch.
2) Select page: 1, address: 00, and set data: 01.
3) Select page: D, address: 02, and set data: 00.
4) Press the PAUSE button of the adjusting remote commander.
5) Remove the power supply from the unit.

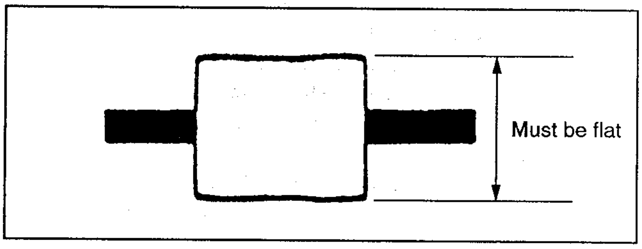


Fig. 6-2-1.

6-3. VIDEO SECTION ADJUSTMENTS

When performing adjustments, refer to the layout diagrams for adjustment related parts beginning from page 6–84.

3-1. PREPARATIONS BEFORE ADJUSTMENT

The following adjusting instruments are used for adjusting the video section.

3-1-1. Equipments to be Used

1) TV monitor
2) Oscilloscope: 2 phenomena, band 30 MHz or wider, with delay mode. (Use a 10:1 probe unless specified otherwise.)
3) Frequency counter
4) Pattern generator with video output terminal
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion meter
9) Audio attenuater
10) Regulated power supply
11) Alignment tape
    - For tracking adjustment (WR5-1CP)
      Part Code: 8-967-995-07
    - For Hi8 mode video frequency characteristics adjustment (WR5-7CE)
      Part Code: 8-967-995-18
    - For checking standard 8 mm mode operations
      For SP (WR5-5NCP)
      Part Code: 8-967-995-47
      Or (WR5-4NCP)
      Part Code: 8-967-995-46
      For LP (WR5-4CL)
      Part Code: 8-967-995-56
      For checking AFM stereo operations (WR5-9CS)
      Part Code: 8-967-995-28
      For BPF adjustment (WR5-11CS)
      Part Code: 8-967-995-76
    - For checking Hi8 mode operations (ME tape)
      For SP (WR5-8CSE)
      Part Code: 8-967-995-48
      For LP (WR5-8CLE)
      Part Code: 8-967-995-57
12) remote commander for adjustment (J-6082-053-B)
13) VC board extension cord (42P, 0.8 mm)
    Part Code: J-6082-285-A
14) Control switch block (FK board) extension cord (9P, 0.8 mm)
    Part Code: J-6082-288-A
15) AU board extension cord (34P, 0.8 mm)
    Part Code: J-6082-286-A
16) PJ board extension cord (12P, 0.8 mm)
    Part Code: J-6082-287-A

3-1-2. Adjusting Precautions

1) The adjustment for this unit is performed using the VIDEO input (VIDEO terminal input) or the camera input. The camera input can be used for video adjustments only. Use the VIDEO input for the other adjustments.
   When using the VIDEO input, set the power supply switch to "VTR or PLAYER" or set the "forcible VTR power supply ON mode" using the adjusting remote commander. (Note 1).
   When using the camera input, set the power supply switch to "CAMERA" or set the "Forcible camera+VTR power supply ON mode" using the adjusting remote commander (Note 2).
   After completing adjustments, be sure to exit the "forcible VTR power supply ON mode" or "forcible camera+VTR power supply ON mode" (Note 3).
2) The F panel block (MA board and MI board) is not used for video adjustments. Disconnect the following connectors in these adjustments.
   1. CN1301 of the AU board
3) The cabinet (R) (SD board: Power supply switch, camera function switch, speaker, LCD unit, viewfinder) need not be connected if the "forcible VTR power supply ON mode" or "forcible camera+VTR power supply ON mode" is set. In this case, disconnect the following connectors.
   1. CN503 of the VS board (23P, 0.5 mm)
   2. CN206 of the VS board (14P, 0.5 mm)
   3. CN101 of the ZB board (4P, 0.8 mm)
   4. CN902 of the DD board (13P, 0.8 mm)

   However, as disconnecting these connectors means disconnecting the 3V lithium power supply, data set by the user such as the date, time, and menu will be lost. After completing the adjustments, set these data again, and be sure to exit the "forcible VTR power supply ON mode" or "forcible camera+VTR power supply ON mode". (Note 3)

4) The lens block and VC board are not used for video adjustments. Disconnect the following connectors in these adjustments.
   1. CN203 of the VS board (42P, 0.8 mm)
   2. CN775 of the VC board (8P, 0.8 mm)
      (STEADY SHOT model)

   Connect the following when removing the VC board.
   1. Connect Pin ㉒ (REG H) and Pin ⑦ (D3.6V) of CN203 of the VS board with a jumper wire.

   When connecting the VC board using the extension cord, use the following type.
   1. J-6082-285-A (42P, 0.8 mm)
5) The audio board (AU board) is required only for audio adjustments. When not using it, disconnect the following connector.
   1. CN202 of the VS board

   When connecting the AU board using the extension cord, use the following type.
   1. J-6082-286-A (34P, 0.8 mm)
6) When opening the VS board, disconnect the following connectors.
   1. CN502 of the VS board (9P, 0.8 mm)

   The VTR function keys will not work. Use the remote commander to perform operations other than EJECT.
   When connecting the control switch block (FK) and CN502 of VS board using the extension cord, use the following type.
   1. J-6082-288-A (9P, 0.8 mm)

Note 1: Setting the "forcible VTR power supply ON mode (VIDEO input mode)"
1) Set data: 01 to page: 1, address: 00.
2) Set data: 02 to page: D, address: 03 and press the PAUSE button of the adjusting remote commander.

By performing the above, the VTR can be operated with the cabinet (R) removed. After completing adjustments, be sure to exit the "forcible power supply ON mode".

Note 2: Setting the "forcible camera+VTR power supply ON mode (camera input mode)"
1) Set data: 01 to page: 1, address: 00.
2) Set data: 03 to page: D, address: 03 and press the PAUSE button of the adjusting remote commander.

By performing the above, the VTR can be operated with the cabinet (R) removed. After completing adjustments, be sure to exit the "forcible power supply ON mode".

Note 3: Exiting the "forcible power supply ON mode"
1) Set data: 01 to page: 1, address: 00.
2) Set data: 00 to page: D, address: 03 and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: 1, address: 00.

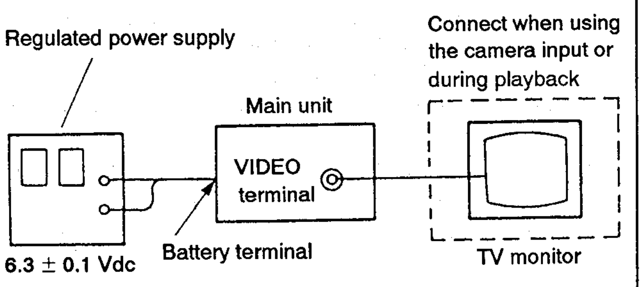
3-1-3. Connecting the Equipments

Connect the measuring instruments as shown in Fig. 6-3-1. according to the input terminal specifications (VIDEO input or CAMERA input), and perform the adjustments.
The input terminal is specified in the ( ) in the signal column. Either input terminal can be used when there are no specifications.

Note 1: If the VIDEO input is used for the adjustments which specify for the CAMERA input to be used, the product specifications of the unit may not be satisfied in some cases. Be sure to perform according to the specifications.

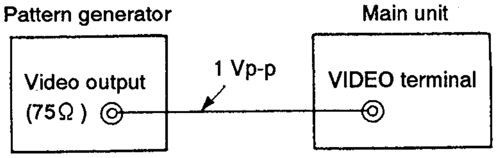
Note 2: When adjustments are performed with the S video output terminal VTR as the signal source, the efficiencies of the unit may be affected by VTR. It is recommendet that a pattern generator with a Y/C separation output terminal be used as much as possible.

Connecting the TV monitor and regulated power supply


Regulated power supply
Connect when using the camera input or during playback
Main unit
VIDEO terminal
6.3 ± 0.1 Vdc
Battery terminal
TV monitor

Connecting the pattern generator

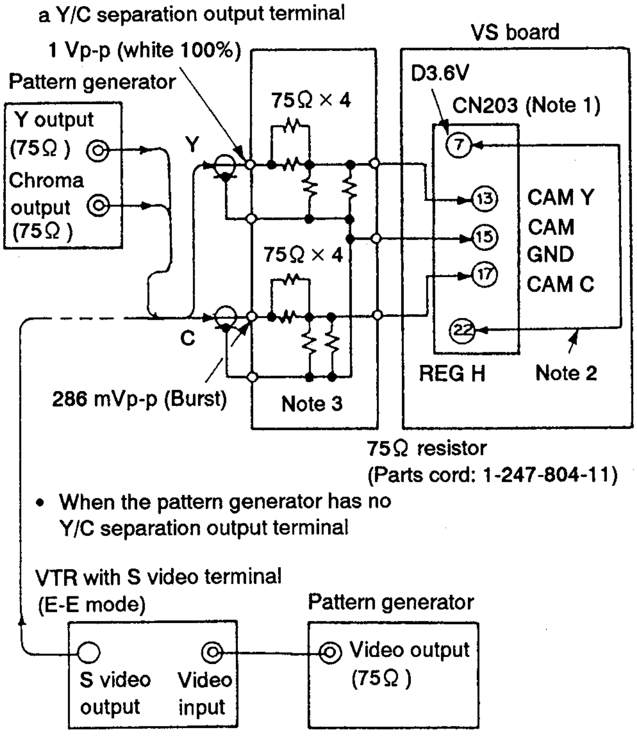
[VIDEO Input]
Set the power supply switch to "PLAYER or VTR" or set the "forcible VTR power supply ON mode" using the adjusting remote commander.


Pattern generator
Main unit
Video output
(75Ω)
1 Vp-p
VIDEO terminal

Note: The TV monitor cannot be connected.
Use the view finder to monitor.

[CAMERA Input]
Set the power supply switch to "CAMERA" or set the "forcible camera+VTR power supply ON mode" using the adjusting remote commander.

- When the pattern generator has a Y/C separation output terminal


VS board
1 Vp-p (white 100%)
Pattern generator
Y output
(75Ω)
Chroma
output
(75Ω)
Y
75Ω × 4
D3.6V
CN203 (Note 1)
7
13
15
17
22
CAM Y
CAM GND
CAM C
75Ω × 4
C
286 mVp-p (Burst)
Note 3
REG H
Note 2
75Ω resistor
(Parts cord: 1-247-804-11)
VTR with S video terminal
(E-E mode)
Pattern generator
S video output
Video input
Video output
(75Ω)

- When the pattern generator has no Y/C separation output terminal

Note 1: Remove the VC board.
Note 2: Connect Pins ⑦ and ㉒ of CN203 with the jumper wire.
Note 3: The chroma signal input is not required for some adjustments.

Fig. 6-3-1.

3-1-4. How to Set the REC Mode in the Model without REC switch

1) REC key forbidden accept mode cancel
   1. Connect the adjusting remote commander to the remote terminal.
   2. Turn on the power.
   3. Turn on the HOLD switch of the adjusting remote commander.
   4. Select the page: 1 address: 00, and set the data to 01.
   5. After memorizing the data of address: 17 of page: D, set data: 17 to the address.
   6. Press PAUSE button on the adjusting remote commander. (Write to the non-volatile memory)

The REC key is accepted through the above procedure.

2) REC mode setting
   1. Turn off the HOLD switch of the adjusting remote command-er.
   2. Press REC buttons of the adjusting remote commander.
   3. Perform "3. Procedure after completed the adjustment", after completing adjustment.

3) Procedure after completed the adjustment
   Be sure to return the mode to REC key forbidden accept mode after adjustment.
   1. Connect the adjusting remoter controller.
   2. Turn on the power.
   3. Turn on HOLD switch of the adjusting remote commander.
   4. Select the page: 1 address: 00, and set the data to 01.
   5. Set the data memorized at step 1)-5 to address: 17 of page: D.
   6. Press PAUSE button on the adjusting remote commander. (Write to the non-volatile memory)
   7. Turn off the power.

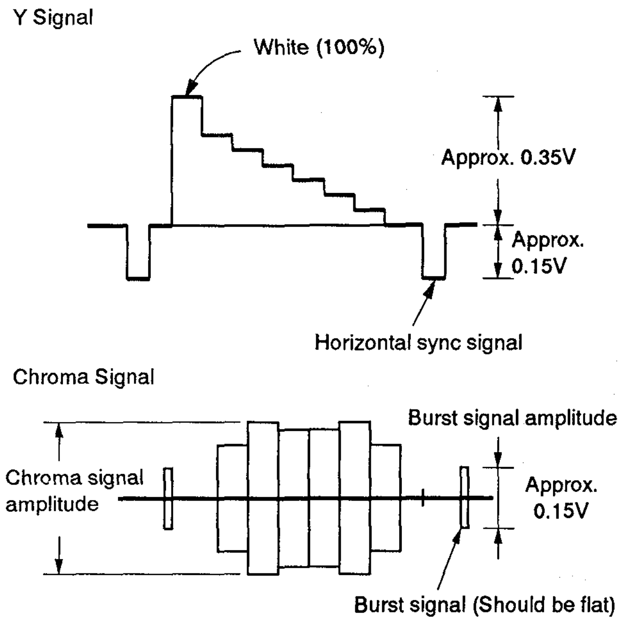
3-1-5. Checking the Input Signals

Because the video signal obtained from the pattern generator is used as the adjustment signal for adjusting the VTR section, the video output signal must satisfy the given specifications.

1. CAMERA Input

Connect the oscilloscope to Pin ⑬ of CN203 on VS board, and check that the sync signal of the Y signal is approximately 0.15 Vp-p and that the amplitude of the video section is approximately 0.35 Vp-p. (When a VTR with the S VIDEO output terminal is used, also check that the chroma signal and burst signal have not remained.) Connect the oscilloscope to Pin ⑰ of CN203 on VS board, and check that the burst signal amplitude of the chroma signal is approximately 0.15 Vp-p and flat, and that the amplitude ratio of the burst signal to the chroma signal is 0.30:0.66. The Y and chroma signals used in the adjustment are shown in Fig. 6-3-2.

Note: Be sure to check in the recording mode.


Y Signal
White (100%)
Approx. 0.35V
Approx. 0.15V
Horizontal sync signal
Chroma Signal
Burst signal amplitude
Chroma signal amplitude
Approx. 0.15V
Burst signal (Should be flat)

Burst amplitude: Chroma amplitude=0.30:0.66

Fig. 6-3-2. Color bar signal of pattern generator

2. VIDEO Input

Connect the oscilloscope to the video input/output terminal, and check that the sync signal amplitude of the video signal is approximately 0.3V, the amplitude of the video section is approximately 0.7V, the amplitude of the burst signal is approximately 0.3V and flat, and that the level ratio of the burst signal to the "red" signal is 0.30:0.66.

The video signal (color bar) used for adjusting the VTR section is shown in Fig. 6-3-3.

Note: Be sure to check in the record mode.

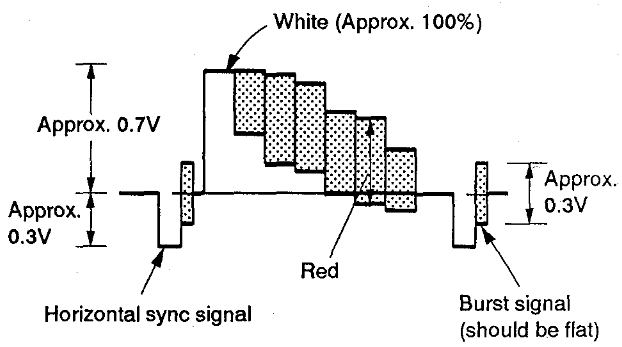

White (Approx. 100%)
Approx. 0.7V
Approx. 0.3V
Approx. 0.3V
Red
Horizontal sync signal
Burst signal (should be flat)

Fig. 6-3-3. Color Bar Signal of Pattern Generator

3-1-6. Alignment Tape

The following table lists alignment tapes which are available. Use the tape specified in the signal column for each adjustment. If the type of tape to be used for checking operations is not specified, use whichever type.

Name	**Record -ing mode**	**Tape type**	**Tape speed**	**Recording contents**		**Usage**
				Video area	**PCM area**	
Tracking WR5-1CP	Standard 8 mm	MP	SP	CH2: Signal for 1 MHz tape path adjustment		Tape path adjustment Switching position adjustment
Video frequency characteristics WR5-7CE	Hi8	ME	LP	RF sweep 0 to 15 MHz Marker 2, 4.5, 7, 8.5, 10 MHz		Frequency characteristics adjustment
Video frequency characteristics WR5-2C	Standard 8 mm	MP	LP	RF sweep Marker 1, 3.58, 5.5, 7 MHz		
Operation check (SP mode) WR5-5CSP	Standard 8 mm	MP	SP	• Video signal Color bar 4 minutes Monoscope 4 minutes • Audio signal (AFM) 400 Hz 60% modulation	• Audio signal (PCM) Monoscope section 20 Hz 20 sec. 400 Hz 20 sec. 14 kHz 20 sec. Repeated 4 times Color bar section 1 kHz 4 minutes	Checking operations
Operation check WR5-8CSE	Hi8	ME	SP		• Audio signal (PCM) 400 Hz	
Operation check WR5-4CL	Standard 8 mm	MP	LP	• Video signal Color bar 4 minutes Monoscope 4 minutes • Audio signal (AFM) 400 Hz 60% modulation		
Operation check WR5-8CLE	Hi8	ME	LP		• Audio signal (PCM) 400 Hz	
AFM stereo Operation check WR5-9CS	Standard 8 mm	MP	SP	• Video signal Color bar 4 minutes Monoscope 4 minutes • Audio signal (AFM) Stereo section (color bar) Lch: 400 Hz, Rch: 1 kHz (L+R: 1.5 MHz ± 60 kHz DEV L–R: 1.7 MHz ± 30 kHz DEV) Bilingual section (Monoscope) Main: 400 Hz (1.5 MHz ± 60 kHz DEV) Sub: 1 kHz (1.7 MHz ± 30 kHz DEV)	• Audio signal (PCM) 400 Hz 8 minutes	AFM stereo Checking operations
BPF adjustment WR5-11CS	Standard 8 mm	MP	SP	• Video signal Color bar • Audio signal Main: 1 kHz (1.5 MHz ± 100 kHz DEV) Sub: 1 kHz (1.7 MHz ± 50 kHz DEV)		BPF Adjustment

Tape type

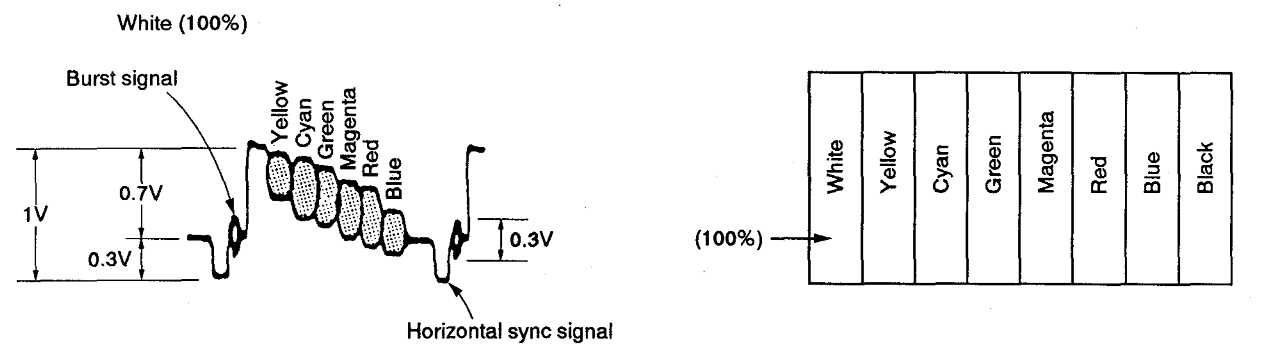
MP············ Particle type metal tape

ME············ Evaporated type metal type

Table 6-3-1.

Fig. 6-3-4. shows the 75% color bar signals recorded on the alignment tape.

Note: Measure using the video output terminal (Terminated at 75 Ω)


White (100%)
Burst signal
Yellow
Cyan
Green
Magenta
Red
Blue
1V
0.7V
0.3V
0.3V
Horizontal sync signal
(100%)
White
Yellow
Cyan
Green
Magenta
Red
Blue
Black

Color bar signal waveform

Color bar pattern

Fig. 6-3-4. Color Bar Signals of the Alignment Tape

3-1-7. Input/Output Level and Impedance

1. CCD-TRV30E/TRV40E/TRV50E, FV 836

Video input/output	Phono jack, 1 Vp-p, 75Ω , unbalanced, sync negative
Audio input/output	Phono jack, Input: –7.5 dBs, input impedance more than 47 kΩ Output: –7.5 dBs, (at load impedance 47 kΩ), impedance less than 2.2 kΩ

2. CCD-TRV70E, FV 876

S video input/output	4-pin mini DIN, Luminance signal: 1 Vp-p, 75Ω , unbalanced, sync negative Chrominance signal: 0.286 Vp-p, 75Ω , unbalanced
Video input/output	Phono jack, 1 Vp-p, 75Ω , unbalanced, sync negative
Audio input/output	Phono jack, Input: –7.5 dBs, input impedance more than 47 kΩ Output: –7.5 dBs, (at load impedance 47 kΩ), impedance less than 2.2 kΩ

3. CCD-TRV60E

S video output	4-pin mini DIN, Luminance signal: 1 Vp-p, 75Ω , unbalanced, sync negative
Video output	Phono jack, 1 Vp-p, 75Ω , unbalanced, sync negative
Audio output	Phono jack, –7.5 dBs, (at load impedance 47 kΩ) impedance less than 2.2 kΩ

3-1-8. Service Mode

Note: After the completion of the all adjustments, cancell the service mode by either of the following ways.

1) Unplug the main power supply and remove the lithium battery. (In this case, date and time and menu setting have been set by users are canceled. Perform resetting.)
2) Return data of the address: 00 on page: 1 to 00. And when data on page: 2 is changed, return the data to the original condition.

1. Test mode setting

Set/release each test mode. Set data: 01 to page: 1, address: 00, before setting the data.

Page D	Address 02

Data	Function
00	Normal
01	Test mode 1 Various emergency prohibitions and releases Drum, capstan, loading motor, reel, tape top and end, DEW SP/LP automatic discrimination prohibition, manual switching, 5 minutes pause release prohibition Power off prohibition/release by battery end

Page D	Address 03

Data	Function
00	Normal
01	Camera power ON
02	VTR power ON
03	Camera + VTR power ON

* For page D, the data set will be recorded in the nonvolatile memory by pressing the PAUSE button on the adjusting remote commander. Take note that, in this case, the test mode will not be released even if the main power has been turned off (6.3 Vdc).

* Be sure to return this address data to 00 after completing adjustments/repairs and press the PAUSE button of the adjusting remote commander.

2. Emergency code

Fault (error) symptoms can be checked.

Page D	Address E4

Last emergency code

……Last error code generated (This data will be renewed each time an error occurs.)

Page D	Address E8

2nd emergency code

……2nd error code generated

Page D	Address EC

First emergency code

……First error code generated

* Be sure to rewrite the data of addresses E4, E8 and EC to 00 after repairs/adjustments.

* When rewriting the data, be sure to press the PAUSE button of the remote commander after setting the data.

Code	Error Condition
00	No error
01	Loading motor error
02	Reel error during unloading
03	Reel errors at other times
04	Capstan error
05	FG error during drum start up
06	PG error during drum start up
07	FG error during normal drum conditions
08	PG error during normal drum conditions
09	Phase error during normal drum conditions

3. Emergency mode

The operation mode can be checked during faults.

Page D	Address E5

Last emergency mode
……The operation mode when the last error is generated
(This data will be renewed each time an error occurs.)

Page D	Address E9

2nd emergency mode
……The operation mode when the 2nd error is generated

Page D	Address ED

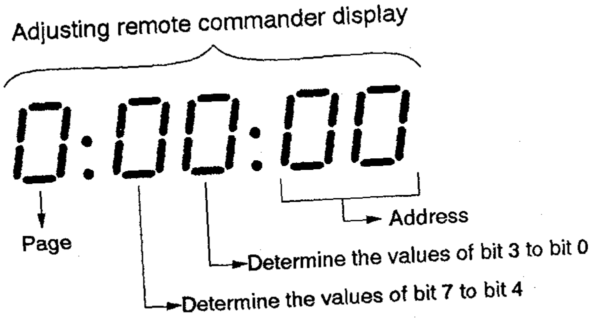
First emergency mode
……The operation mode when the first error is generated

- * Be sure to rewrite the data of addresses E5, E9 and ED to 00 after repairs/adjustments.
- * When rewriting the data, be sure to press the PAUSE button of the adjusting remote commander after setting the data.

Code	Error Conditions
00	BEFOR INITIALIZE
01	EJECTED
02	NORMAL STOP
03	FF
04	NORMAL REC
06	NORMAL PB
07	PB PAUSE
12	LOADING
14	REC PAUSE
26	X1
27	1/5 SLOW
31	UNLOADING
46	CUE
56	REVIEW
62	STOP TAPE END
66	X2
67	FRAME
72	STOP TAPE TOP
83	REWIND
85	REC REVIEW (+)
95	REC REVIEW (–)
97	–PB PAUSE
A2	EMERGENCY LOADING
A5	EDIT SEARCH (+)
B1	EMERGENCY UNLOADING
B2	STOP EMERGENCY 1
B5	EDIT SEARCH (–)
C2	STOP EMERGENCY 2
E2	STOP NO CASSETTE
F5	EDIT PAUSE

4. Bit value discrimination

Bit values must be discriminated using the display data of the adjusting remote commander for the following items. Use the table below to discriminate if the bit value is "1" or "0".


Adjusting remote commander display
0:00:00
Page
Address
Determine the values of bit 3 to bit 0
Determine the values of bit 7 to bit 4

	Remote controller display	Bit value			
		bit 3 or bit 7	bit 2 or bit 6	bit 1 or bit 5	bit 0 or bit 4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ→	8	1	0	0	0
	9	1	0	0	1
	A(A)	1	0	1	0
	B(b)	1	0	1	1
	C(c)	1	1	0	0
	D(d)	1	1	0	1
Ⓑ→	E(E)	1	1	1	0
	F(F)	1	1	1	1

(Example) If the remote commander display data is "8E", bit values from bit7 to bit4 can be discriminated from column Ⓐ, and those from bit3 to bit0 from column Ⓑ.

5. Battery voltage check

Page 2	Address 49

Display Data	Battery Voltage
F0	Approx. 10.6 Vdc
E0	Approx. 9.9 Vdc
D0	Approx. 9.2 Vdc
C0	Approx. 8.5 Vdc
B0	Approx. 7.8 Vdc
A0	Approx. 7.1 Vdc
90	Approx. 6.4 Vdc
80	Approx. 5.7 Vdc
70	Approx. 5.0 Vdc

Using method:

Order	Page	Address	Data	Procedure
1	2	00	01	Preparation
2	2	49		The battery voltage can be discriminated by the display data.

* Voltage measurement accuracy is approx. ± 10%.

6. Mechanism controller input/output check

Page 2	Address 83

Bit	IN/OUT Signal	Condition
0		
1	E/L DET	"1"=Hi8, "0"=Normal
2	SP/LP DET	"1"=SP, "0"=LP
3	CLOG DET	"1"=Clog detected, "0"=Others
4	REC PROOF	"1"=Recording prohibited, "0"=Recording possible
5	TAPE PREEND	"1"=Tape preend, "0"=Others
6	DEW DET	"0"=Condensation occured, "1"=Others
7	CASSETTE IN	"0"=No cassette

Using method:

Order	Page	Address	Data	Procedure
1	2	00	00	Preparation
2	2	83		The condition of each input signal can be discriminated by differentiating the bit value of the display data.

Page 2	Address 84

Bit	IN/OUT Signal	Condition
0	VA PB MODE	"1"=PB, "0"=REC
1	RP PB MODE	"1"=PB, "0"=REC
2	JOG	"1"=Variable speed playback, "0"=Others
3	ME/MP SW	"1"=ME tape, "0"=Other tape
4	Hi8 MP SW	"1"=Hi8 MP tape, "0"=Other tape
5	SERVO OPERATION	"1"=SP mode, "0"=LP mode
6	VIDEO MUTE	"1"=Mute, "0"=Video output
7	AUDIO MUTE	"1"=Mute, "0"=Audio output

Using method:

Order	Page	Address	Data	Procedure
1	2	00	00	Preparation
2	2	84		The condition of each signal can be discriminated by differentiating the bit value of the display data.

7. Mode switch and CC DOWN switch check

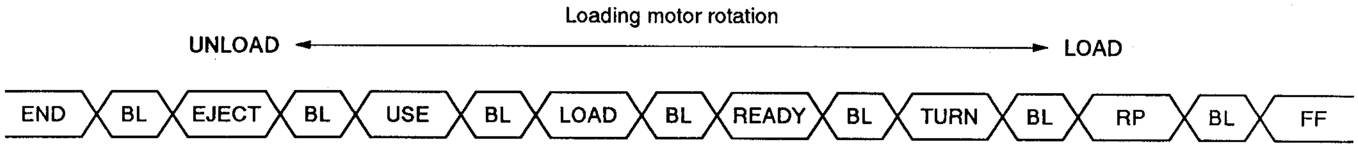
The mode switch position (mechanical section condition) can be checked.

Page 3	Address E9

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
MSW 2	MSW 1	MSW 0	CC DOWN				

				DATA	POSITION	FUNCTION
0	0	0	0/1	E*/F*	BL	Interval of each position
0	1	1	1	7*	END	FULL END processing (T side lock removal)
0	0	1	1	3*	EJECT	Cassette compartment ejection
1	0	1	1	B*	USE	EJECTED (Unskate end)
0	0	1	0	2*	LOAD	LOADING (Skate in)
1	0	0	0	8*	READY	NORMAL STOP position
1	1	0	0	C*	TURN	OFF of pinch roller only with STOP↔FF/REW (oscillating position)
0	1	0	0	4*	RP	PB, REC, RVS, REV, CUE
0	0	0	0	0*	FF	FF/REW

*: Don't care


Loading motor rotation
UNLOAD
LOAD
END
BL
EJECT
BL
USE
BL
LOAD
BL
READY
BL
TURN
BL
RP
BL
FF

Using method:

Order	Page	Address	Data	Procedure
1	3	00	00	Preparation
2	3	E9		The mode switch position and CC DOWN switch condition can be discriminated by the display data.

8. Tape top/end sensor check

Page 3	Address 0A

Display Data	Tape Top/End Sensor Condition
00	Tape present (Middle of tape)
01	Tape end
10	Tape top
11	No tape

Tape end sensor condition
Tape top sensor condition

"0"=Non active (Not receiving light)
"1"=Active (Receiving light)

Using method:

Order	Page	Address	Data	Procedure
1	3	00	02	Preparation
2	3	0E	10	Preparation
3	3	0A		The condition of the tape top/end sensor can be discriminated by the display data.

9. Version of mechanical control microprocessor

Page 3	Address 0B

Display Data	Microprocessor version
01	Version 1

Using method:

Order	Page	Address	Data	Procedure
1	3	00	02	Preparation
2	3	0B		The microprocessor version can be discriminated by the display data.

10. Drum running time

Page 0	Address 02, 03

Address	
02	Drum running hour (decimal lower)
03	Drum running hour (decimal higher)

The data is retained by lithium battery. (NOT EEPROM)
The data is counted up 0 hour to 9999 hour.

11. Page D address list for standard 8 mm model (CCD-TRV30E/TRV40E/TRV50E, FV 836)

Note 1: The adjustment data initial value is the data input before performing video section adjustments (Page D) if the Page D data has been erased due to some reason.

Note 2: The data written in the adjustment data memo column are fixed.
After adjusting, check that these data have not been rewritten by mistake.

Note 3: In some case, data have been input to the page D address 91 to AF, BC to D3 and F0 to FF. This has no relation to the adjustment.

Note 4: *1 : 06 (CCD-TRV30E (AEP, UK), FV 836)
17 (CCD-TRV30E (E, AUS, HK), TRV40E/TRV50E)
*2 : 04 (CCD-TRV30E, FV 836)
64 (CCD-TRV40E/TRV50E)
*3 : 58 (CCD-TRV30E (AEP, UK), FV 836)
78 (CCD-TRV30E (E, AUS, HK), TRV40E)
FC (CCD-TRV50E)
*4 : 2E (CCD-TRV30E, FV 836)
6F (CCD-TRV40E/TRV50E)
*5 : 00 (CCD-TRV30E)
40 (CCD-TRV40E/TRV50E)
FF (FV 836)
*6 : 30 (CCD-TRV30E)
40 (CCD-TRV40E)
50 (CCD-TRV50E)
FF (FV 836)
*7 : 2E (CCD-TRV40E/TRV50E)
34 (CCD-TRV30E, FV 836)
*8 : 29 (CCD-TRV50E)
40 (CCD-TRV30E/TRV40E, FV 836)
*9 : ( ): 3" LCD model
[ ]: 4" LCD model

Address	Adjustment data	
	Initial value	Memo column
00		
01		
02	00	00
03	00	00
04	80	
05	0B	
06	66	
07	7F	
08	84	
09	8A	
0A	8E	
0B	00	00
0C		
0D		
0E		
0F		
10	00	
11	0A	
12	00	
13	00	
14	B6	B6
15	98	98
16	05	05
17 *1	06/17	06/17
18 *2	04/64	04/64
19	00	00
1A *3	58/78/FC	58/78/FC
1B *4	2E/6F	2E/6F
1C	80	80
1D	00	00
1E *5	00/40/FF	00/40/FF
1F *6	30/40/50/FF	30/40/50/FF
20 *7	2E/34	2E/34
21	08	08
22 *8	29/40	29/40
23	00	00
24	33	33
25	33	33
26	28	28
27	28	28
28	A8	A8
29	A8	A8
2A	AC	AC
2B	AC	AC

Table 6-3-2. (1)

Address	Adjustment data	
	Initial value	Memo column
2C	A8	A8
2D	A8	A8
2E	AC	AC
2F	AC	AC
30	E5	E5
31	E5	E5
32	E5	
33	E5	
34	E5	E5
35	E5	E5
36	E5	
37	E5	
38	D1	
39	D8	
3A	D1	
3B	D8	
3C		
3D		
3E		
3F		
40		
41		
42	AE	
43	AE	
44		
45		
46	AE	
47	AE	
48		
49		
4A		
4B		
4C		
4D		
4E		
4F		
50	A2	A2
51	A1	A1
52		
53		
54	00	00
55	00	00
56	90	90
57	00	00

Table 6-3-2. (2)

Address	Adjustment data	
	Initial value	Memo column
58	00	00
59	75	75
5A	D8	D8
5B	DF	DF
5C	D8	D8
5D	D8	D8
5E	D8	
5F	C8	C8
60	C8	C8
61	C8	C8
62	C8	C8
63	C8	
64		
65		
66		
67		
68		
69	DF	DF
6A	DF	DF
6B	DF	DF
6C	DF	DF
6D	DF	DF
6E		
6F		
70	69	
71	72	
72	B0	B0
73	B0	B0
74		
75	C1	
76		
77	8B	
78	00	00
79	00	00
7A	7C	7C
7B	7C	7C
7C	00	00
7D	00	00
7E	60	00
7F	60	00
80	9F	
81	9F	
82	B1	
83	C6	

Table 6-3-2. (3)

Address	Adjustment data	
	Initial value	Memo column
84	80	
85	61	61
86	00	00
87	61	
88	BA	BA
89	BA	BA
8A	00	00
8B	48	48
8C		
8D	5B	
8E	7F	
8F	40	
90	60	60
91 to AF		
B0 *9	(63) [6B]	
B1 *9	(65) [83]	
B2 *9	(8A) [96]	
B3 *9	(85) [8A]	
B4 *9	(6D) [77]	
B5 *9	(96) [8A]	
B6 *9	(90) [B0]	
B7 *9	(AF) [A6]	
B8 *9	(83) [7F]	
B9 *9	(83) [7F]	
BA *9	(84) [C0]	
BB *9	(92) [A5]	
BC to E3		
E4	00	
E5	00	
E6	00	
E7	00	
E8	00	
E9	00	
EA	00	
EB	00	
EC	00	
ED	00	
EE	00	
EF	00	
F0 to FF		

Table 6-3-2. (4)

12. Page D address list for Hi8 model (CCD-TRV60E/TRV70E, FV 876)

Note 1: The adjustment data initial value is the data input before performing video section adjustments (Page D) if the Page D data has been erased due to some reason.

Note 2: The data written in the adjustment data memo column are fixed.
After adjusting, check that these data have not been rewritten by mistake.

Note 3: In some case, data have been input to the page D address 91 to AF and F0 to FF. This has no relation to the adjustment.

Note 4: *1 : 06 (CCD-TRV60E/TRV70E (AEP, UK), FV 876)
17 (CCD-TRV70E (E, HK))
*2 : C4 (CCD-TRV60E)
E4 (CCD-TRV70E, FV 876)
*3 : DC (CCD-TRV60E/TRV70E (AEP, UK), FV 876)
FC (CCD-TRV70E (E, HK))
*4 : 00 (CCD-TRV60E/TRV70E (AEP, UK))
40 (CCD-TRV70E (E, HK))
FF (FV 876)
*5 : 60 (CCD-TRV60E)
70 (CCD-TRV70E)
FF (FV 876)

Address	Adjustment data	
	Initial value	Memo column
00		
01		
02	00	00
03	00	00
04	80	
05	0B	
06	66	
07	7F	
08	84	
09	8A	
0A	8E	
0B	00	00
0C		
0D		
0E		
0F		
10	00	
11	0A	
12	00	
13	00	
14	75	75
15	57	57
16	05	05
17 *1	06/17	06/17
18 *2	C4/E4	C4/E4
19	00	00
1A *3	DC/FC	DC/FC
1B	6F	6F
1C	80	80
1D	00	00
1E *4	00/40/FF	00/40/FF
1F *5	60/70/FF	60/70/FF
20	2E	2E
21	08	08
22	29	29
23	03	03
24	0F	0F
25	F7	F7
26	1C	1C
27	25	25
28	A8	A8
29	A5	A5
2A	9C	9C

Table 6-3-3. (1)

Address	Adjustment data	
	Initial value	Memo column
2B	9F	9F
2C	A8	A8
2D	A9	A9
2E	9C	9C
2F	A5	A5
30	E8	
31	E8	
32	E8	
33	E8	
34	E8	
35	E8	
36	E8	
37	E8	
38	D8	
39	E1	
3A	D8	
3B	E1	
3C		
3D		
3E		
3F		
40	B9	
41	CD	
42	BE	
43	C7	
44	B9	
45	CD	
46	BE	
47	C7	
48		
49		
4A		
4B		
4C		
4D		
4E		
4F		
50	D3	D3
51	CE	CE
52		
53		
54	C2	C2
55	C2	C2

Table 6-3-3. (2)

Address	Adjustment data	
	Initial value	Memo column
56	97	97
57	70	70
58	70	70
59	85	85
5A	DD	
5B	DD	
5C	DD	
5D	DD	
5E	DD	
5F	D9	
60	D9	
61	D9	
62	D9	
63	D9	
64		
65		
66		
67		
68		
69	DF	DF
6A	DF	DF
6B	DF	DF
6C	DF	DF
6D	DF	DF
6E		
6F		
70	75	
71	80	
72	B0	B0
73	B0	B0
74	C2	
75	BE	
76	A7	
77	9E	
78	52	52
79	51	51
7A	7D	7D
7B	7D	7D
7C	45	45
7D	3A	3A
7E	62	62
7F	62	62
80	9E	

Table 6-3-3. (3)

Address	Adjustment data	
	Initial value	Memo column
81	9E	
82	AC	
83	9E	
84	9C	
85	A0	A0
86	A2	
87	94	
88	00	00
89	00	00
8A	00	00
8B	48	48
8C	AF	AF
8D	58	
8E	7F	
8F	5D	
90	60	60
91 to AF		
B0		
B1		
B2		
B3		
B4		
B5		
B6		
B7		
B8		
B9		
BA		
BB		
BC to E3		
E4	00	
E5	00	
E6	00	
E7	00	
E8	00	
E9	00	
EA	00	
EB	00	
EC	00	
ED	00	
EE	00	
EF	00	
F0 to FF		

Table 6-3-3. (4)

3-2. POWER SYSTEM ADJUSTMENTS

1. Oscillator Frequency Check (DD board)

Mode	Camera record
Subject	Arbitrary
Measurement Point	Q905 collector
Measuring Instrument	Frequency counter
Specified Value	500 ± 50 kHz

Adjusting method:

1) Check that the oscillator frequency satisfies the specified value.

2. Power Voltage Check (DD board)

Mode	Camera record
Subject	Arbitrary
Measuring Instrument	Digital voltmeter
D5V check	
Measurement Point	Pin ㉓ of CN901
Specified Value	4.9 ± 0.1 Vdc
EVF5V check	
Measurement Point	Pin ㉝ of CN901
Specified Value	4.9 ± 0.1 Vdc
VID 5V check	
Measurement Point	Pins ⑰ and ⑱ of CN901
Specified Value	4.9 ± 0.1 Vdc
AU 5V check	
Measurement Point	Pin ㉙ of CN901
Specified Value	4.9 ± 0.1 Vdc
RP 5V check	
Measurement Point	Pin ⑭ of CN901
Specified Value	4.9 ± 0.1 Vdc
CAM5V check	
Measurement Point	Pins ⑲ and ⑳ of CN901
Specified Value	4.85 ± 0.1 Vdc
SS 3.6V check	
Measurement Point	Pin ㉗ of CN901
Specified Value	3.6 ± 0.1 Vdc
D3.6V check	
Measurement Point	Pins ⑮ and ⑯ of CN901
Specified Value	3.6 ± 0.1 Vdc
CAM 15V check	
Measurement Point	Pin ㉑ of CN901
Specified Value	15 ± 0.3 Vdc
CAM –8.5V check	
Measurement Point	Pin ㉕ of CN901
Specified Value	$-8.5^{+0.25}_{-0.4}$ Vdc
MT 5V check	
Measurement Point	Pins ⑫, ⑬ and ③ of CN901
Specified Value	5.0 ± 0.1 Vdc

3-3. SYSTEM CONTROL SYSTEM ADJUSTMENTS

1. Page D Initial Value Input

If the page D data has been erased due to some cause, input the page D initial value before performing adjustments. For details on the initial value, refer to "Page D address list" in "3-1-8. Service Mode".

Mode	E-E
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	00 to 90, B0 to BB, E4 to EF

Input method:

1) Set data: 01 to page: 1, address: 00.
2) Select page D, and input the initial value to each address. (After setting the data (initial value), be sure to press the PAUSE button of the adjusting remote commander before changing the address.)

2. Battery End Adjustment

Set the battery end voltage.
If the voltage is incorrect, the life of the battery will shorten.
The image at the battery end will also be rough.

Mode	Camera record
Signal	Arbitrary
Measurement Point	LCD display of the adjusting remote control unit
Measuring Instrument	
Adjustment Page	D
Specified Value	06, , 07, 08, 09, 0A

Connection:

1) Connect the regulated power supply and the digital voltmeter as shown in Fig. 6-3-5.

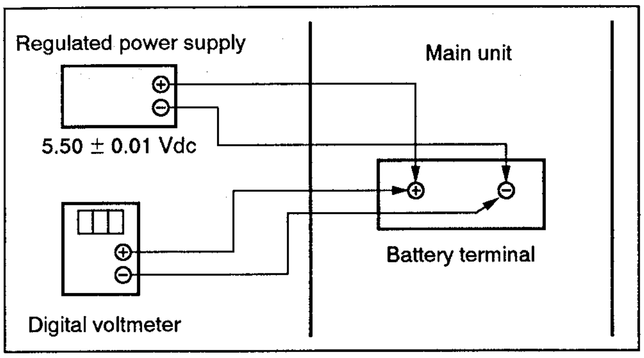


Fig. 6-3-5.

Adjusting method:

1) Adjust the output voltage of the regulated power supply so that the digital voltmeter display is 6.3 ± 0.1 Vdc.
2) Set data: 01 to page: 1, address: 00.
3) Decrease the output voltage of the regulated power supply so that the digital voltmeter display is 5.50 ± 0.01 Vdc.
4) Set data: 01 to page: 2, address: 00.
5) Select page: 2, address: 49, read the adjusting remote commander display data, and this data is named D6.
6) Set data D6 to page: D, address: 06, and press the PAUSE button of the adjusting remote commander.
7) Convert D47 to decimal notation, and obtain D47′. (Refer to Table 6-1-3. "Hexadecimal notation–decimal notation conversion table")
8) Calculate D7′, D8′, D9′ and DA′ using following equations (decimal notation calculation).
   D7′=D47′+3
   D8′=D47′+8
   D9′=D47′+14
   DA′=D47′+18
9) Convert D7′, D8′, D9′ and DA′ to hexadecimal notation, and obtain D7, D8, D9 and DA.
10) Set data: D7′ to page: D, address: 07, and press the PAUSE button of the adjusting remote commander.
11) Set data: D8′ to page: D, address: 08, and press the PAUSE button.
12) Set data: D9′ to page: D, address: 09, and press the PAUSE button.
13) Set data: DA to page: D, address: 0A, and press the PAUSE button.
14) Perform "Battery Down Check".

3. Battery Down Check

Mode	Camera record
Subject	Arbitrary

Connection

1) Connect the regulated power supply and the digital voltmeter as shown in Fig. 6-3-5.

Checking method:
Remove the adjusting remote commander, and perform the following check. If the check is not satisfied, perform from the beginning again.

1) Adjust the output voltage of the regulated power supply so that the digital voltmeter display becomes 6.3 ± 0.1 Vdc.
2) Set to the camera recording mode.
3) Check that the 🪫 mark on the EVF (viewfinder) display is not lighted up. (TALLY lamp lights up).
4) Decrease the the output voltage of the regulated power supply so that the digital voltmeter display becomes 5.54 ± 0.01 Vdc.
5) Check that the 🪫 mark on the EVF display and the TALLY lamp blinks every second.
6) Decrease the the output voltage of the regulated power supply so that the digital voltmeter display becomes 5.42 ± 0.01 Vdc.
7) Check that the 🪫 mark on the EVF display and the TALLY lamp are blinking faster, the VTR stops and the power supply turns off.

3-4. SERVO SYSTEM ADJUSTMENTS

1. Switching Position Adjustment (VS board)

Switching timing of video head setting. If deviated in this case causes switching noise or jitter on the played back screen.

Mode	Playback
Signal	Alignment tape: For tracking adjustment (WR5-1CP)
Measurement Point	CH1: Pin ④ of CN101 (RF SWP) CH2: Pin ③ of CN101 (PB RF)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	04, 05
Specified Value	t_1=0 ± 10 μsec

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Set data: 0B to page: D, address: 05.
3) Change the data of page: D, address: 05 and minimize "t1". (Coarse adjustment)
4) Change the data of page: D, address: 04, and adjust so that the switching position (t_1) becomes the specified value. (Fine adjustment)
5) Press the PAUSE button of the adjusting remote commander.

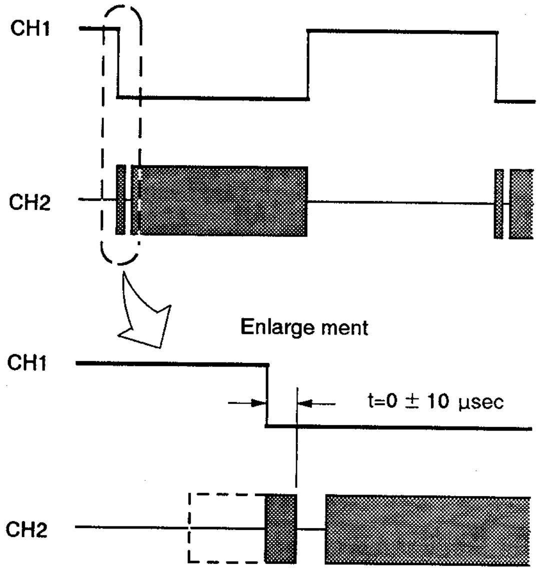


Fig. 6-3-6.

3-5. Standard 8 mm VIDEO SYSTEM ADJUSTMENTS (CCD-TRV30E/TRV40E/TRV50E, FV 836)

The adjustments of the video system must be performed according to the following adjustment procedure.

The color video signal supplied from the pattern generator is used as the video input signal for adjusting the video system in recording mode. Check that the sync signal and the color burst signal satisfy the specification specified during the adjustment set-up shown in Figs. 6-3-2. and 6-3-3.

[Adjusting procedure]

1) Playback frequency characteristics adjustment
2) Flying erase check
3) VXO oscillation frequency check
4) SYNC AGC level adjustment
5) Comb filter adjustment
6) Emphasis input level adjustment
7) WHITE CLIP check
8) DARK CLIP check
9) DE EMPH level adjustment
10) PB Y out level adjustment
11) Y FM carrier frequency adjustment
12) Y FM deviation adjustment
13) Chroma emphasis adjustment 1
14) Chroma emphasis adjustment 2
15) Comb filter fine adjustment
16) REC Y level adjustment
17) REC L adjustment
18) REC CHROMA level adjustment
19) REC ATF level check

1. Playback Frequency Characteristic Adjustment (VS board)

Eliminate the differences in the head characteristics of each channel. If there are differences, flickers and over modulation noises will be produced.

Note 1: The adjusting element for CH2 is shown in parentheses [ ].

Mode	Playback
Signal	Alignment tape: For frequency characteristic adjustment (WR5-6C)
Measurement Point	CH1: Pin ③ of CN102 (PB RF) EXT TRIG: Pin ④ of CN102 (RF SWP)
Measuring Instrument	Oscilloscope TRIG SLOPE: +, [–]
Adjustment Page	D
Adjustment Address	5E, 63
Specified Value	3.58 MHz level: 5.5 MHz level= 4: (3 ± 0.3)

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) After memorizing the data of page: D, address: 05, set data: 1A.
3) Press the PAUSE button of the adjusting remote commander.
4) Change the data of address: 5E [63] of page D, and adjust the level ratio of 3.58 MHz and 5.5 MHz of PB RF output waveform to the specified value.

   Note 2: After each address adjustment, be sure to press the PAUSE button of the adjusting remote commander and memorize the data.
5) Set the data memorized at step 2) to page: D, address: 05, and press the PAUSE button of the adjusting remote commander.

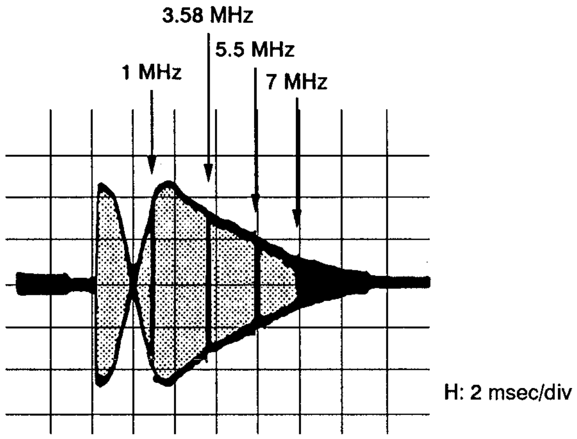


Fig. 6-3-7.

2. Flying Erase Check (VS board)

Mode	Record
Signal	Arbitrary
Measurement Point	Pin ⑫ of CN101 (FE (X))
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Frequency: 8.0 ± 0.5 MHz Voltage: 6.0 ± 1 Vp-p (ME tape) Above 7.0 Vp-p (MP tape)

Checking method:

1) Check that the oscillation frequency and the oscillation voltage satisfieds the specified value.

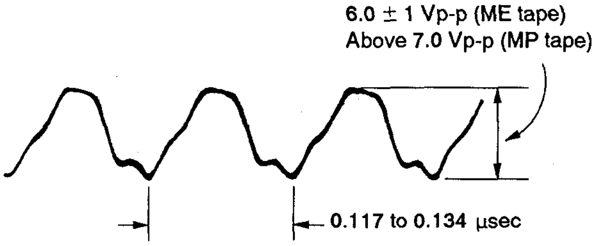


Fig. 6-3-8.

3. VXO Oscillation Frequency Check (VS board)

Mode	Record
Signal	Color bar
Measurement Point	Pin (61) of IC201
Measuring Instrument	Frequency counter
Specified Value	4433619 ± 50 Hz

Note: Connect the frequency counter via a high impedance (approximately 10 MΩ) and low capacity (below 10 pF) buffer.

Adjusting method:

1) Check that the oscillation frequency of pin (61) of IC201 is 4433619 ± 50 Hz.

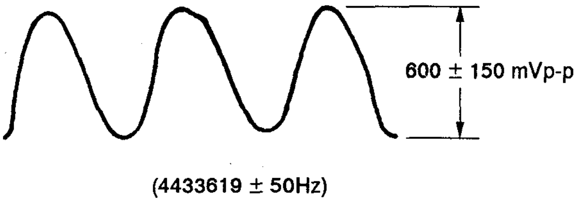


Fig. 6-3-9.

4. SYNC AGC Level Adjustment (VS board)

Adjust so that the Y signal level to be recorded becomes consistent. If it is not consistent, the camera EE image and OA image will be brighter or darker than normal.

Mode	Camera record
Signal	Color bar (Camera input) Note 1
Measurement Point	Pin ⑥ of CN201 (VIDEO I/O) Note 2
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	70
Specified Value	A=1.00 ± 0.025V

Note 1: The chroma signal input is not required.

Note 2: Terminate the video out terminal at 75Ω .
75Ω resistor (Part code: 1-247-804-11)

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: 70, and adjust so that the Y signal level (A) becomes the specified value.
3) Press the PAUSE button of the adjusting remote commander.

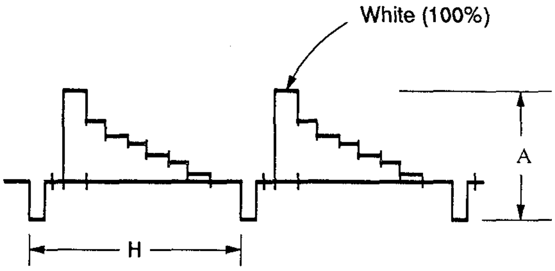


Fig. 6-3-10.

5. Comb Filter Adjustment (VS board)

Set the level and phase of the 2H delayed signal for the comb filter.

Mode	Camera record
Signal	Color bar (VIDEO input)
Measurement Point	Pin ⑭ of IC201 (Y COMB OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	71, 84
Specified Value	Residual chroma component (A) is minimum.

Adjusting method:

1) Set to the VIDEO input mode.
2) Set to the record mode.
3) Set data: 01 to page: 1, address: 00.
4) Set data: 00 to page: 2, address: 00.
5) Set data: 04 to page: 2, address: B0.
6) After memorizing the data of address: 9A of page: 2, set data: 10 to the address.
7) Change the data of page: D, address: 71, and adjust the residual chroma component (A) to minimum.
8) Change the data of page: D, address 84 so that the residual chroma component becames minimum.
9) Repeat 7) and 8).
10) Press the PAUSE button of the adjusting remote commander.

Processing after completing adjustments

1) Set the data memorized at step 6) to address: 9A of page: 2.
2) Set data: 00 to page: 2, address: B0.

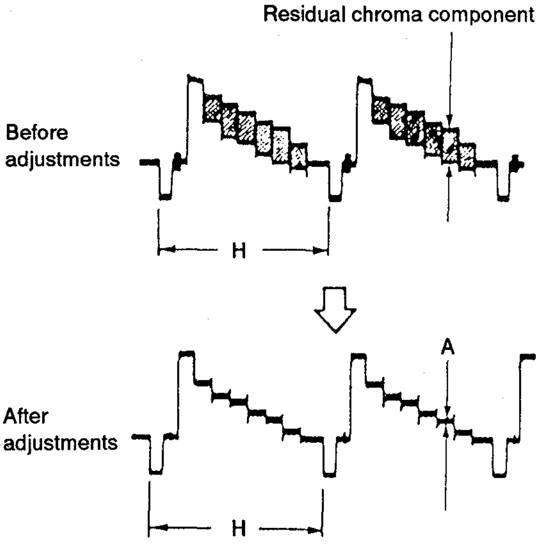


Fig. 6-3-11.

6. Emphasis Input Level Adjustment (VS board)

Y level of emphasis circuit setting. If deviated, this causes too bright or too dark image during play back after recording.

Mode	Camera record
Signal	Color bar (CAMERA input)
Measurement Point	Pin ⑤ of IC201 (EMPH IN) or Pin ⑤ of IC205
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	82
Specified Value	A=0.50 ± 0.01V

Note 1: The chroma signal input is not required.

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: 82, and adjust so that the Y signal level (A) becomes the specified value.
3) Press the PAUSE button of the adjusting remote commander.

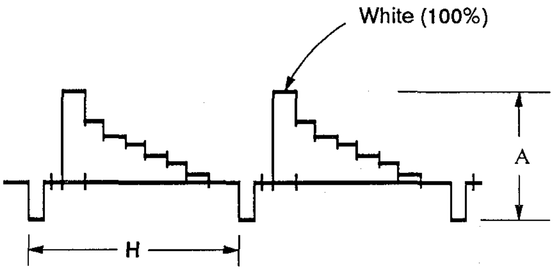


Fig. 6-3-12.

7. WHITE CLIP Check (VS board)

Mode	Camera record
Signal	Color bar (CAMERA input)
Measurement Point	Pin ㊴ of IC201 (Y RF OUT)
Measuring Instrument	Oscilloscope
Specified Value	A=220 ± 10%

Note 1: The chroma signal input is not required.

Checking method:

1) Set to the record mode.
2) Set data: 00 to page: 2, address: 00.
3) Set data: 04 to page: 2, address: B0.
4) After memorizing the data of address: 9A of page: 2, set data: 01 to the address.
5) Check that the white clip level (A) satisfies the specified value.

Processing after completing adjustments

1) Set the data memorized at step 4) to address: 9A of page: 2.
2) Set data: 00 to page: 2, address: B0.

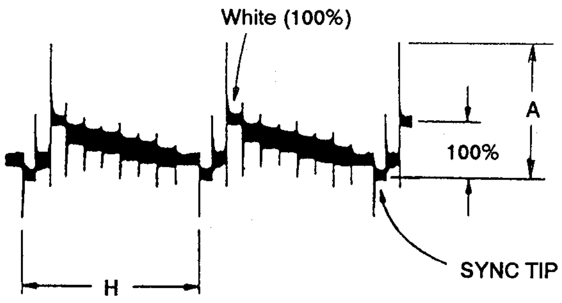


Fig. 6-3-13.

8. DARK CLIP Check (VS board)

Mode	Camera record
Signal	Color bar (CAMERA input)
Measurement Point	Pin ㊴ of IC201 (Y RF OUT)
Measuring Instrument	Oscilloscope
Specified Value	A=60 ± 10%

Note 1: The chroma signal input is not required.

Checking method:

1) Set to the record mode.
2) Set data: 00 to page: 2, address: 00.
3) Set data: 04 to page: 2, address: B0.
4) After memorizing the data of address: 9A of page: 2, set data: 01 to the address.
5) Check that the dark clip level (A) satisfies the specified value.

Processing after completing adjustments

1) Set the data memorized at step 4) to address: 9A of page: 2.
2) Set data: 00 to page: 2, address: B0.

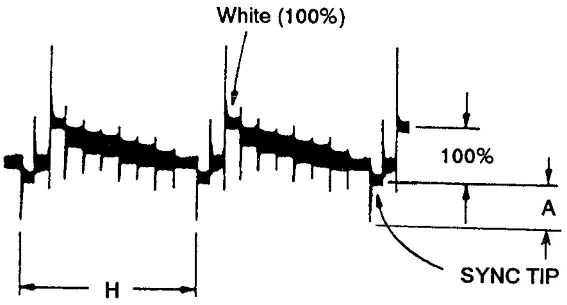


Fig. 6-3-14.

9. DE EMPH Level Adjustment (VS board)

De-emphasis input level setting. If deviated, this causes excessive brightness or darkness.

Mode	Playback
Signal	Alignment tape: For checking operations Color bar section (WR5-5CSP)
Measurement Point	Pin ㉓ of IC201 (DL IN 1)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	87
Specified Value	A=0.50 ± 0.01V

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: 87, and adjust so that the Y signal level (A) becomes the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Perform "PB Y OUT Level Adjustment".

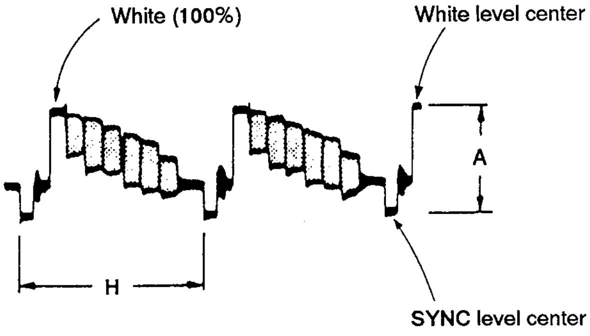


Fig. 6-3-15.

10. PB Y OUT Level Adjustment

PB LINE OUT Y level setting. If deviated, this causes too bright or too dark picture.

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-5CSP) Color bar section
Measurement Point	Pin ⑥ of CN201 (VIDEO I/O)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	83
Specified Value	A=1.0 ± 0.05V

Note 1: Terminate the video output/output terminal at 75Ω . 75Ω resistor (Part code: 1-247-804-11)

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: 83, and adjust so that the video signal level (A) becomes the specified value.
3) Press the PAUSE button of the adjusting remote commander.

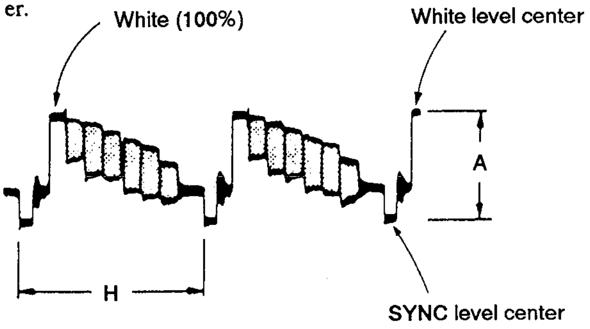


Fig. 6-3-16.

11. Y FM Carrier Frequency Adjustment (VS board)

FM carrier frequency of REC Y setting. If deviated, this caused blurred played back picture or deteriorated resolution.

Mode	Record
Signal	No signal (CAMERA input)
Measurement Point	Pin ㊴ of IC201 (Y RF OUT) (JL209)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	75
Specified Value	4.385 ± 0.01 MHz

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: 75, and adjust so that the Y FM carrier frequency becomes the specified value.
3) Press the PAUSE button of the adjusting remote commander.

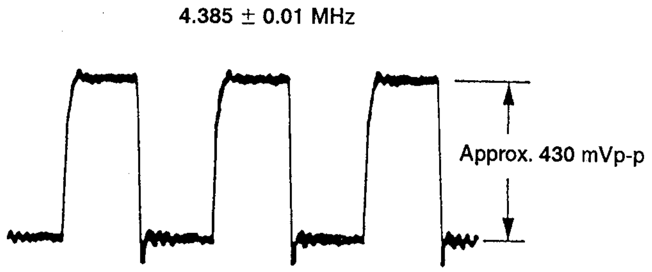


Fig. 6-3-17.

12. Y FM Deviation Adjustment (VS board)

FM deviation of REC Y setting. If deviated, this causes too bright/dark image, or marked occurrence of black picture or deteriorated resolution.

Mode	Record and playback
Signal	Color bar (CAMERA input)
Measurement Point	Pin ㉓ of IC201 (DL IN 1)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	77
Specified Value	A=0.50 ± 0.01V

Note 1: Check that "Emphasis Input Level Adjustment", have been completed.

Note 2: The chroma signal input is not required.

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Record the color bar signal.
3) Playback the recorded signal.
4) Check the playback signal level (A).
   Specification:A=0.50 ± 0.01V
5) If the specification is not satisfied, change the data of page: D, address: 77, and repeat steps 2) to 4).

Playback signal level	Changing the data
When smaller than the specified value	Increase
When bigger than the specified value	Decrease

6) Press the PAUSE button of the adjusting remote commander.
7) Perform "Y FM Carrier Frequency Adjustment".

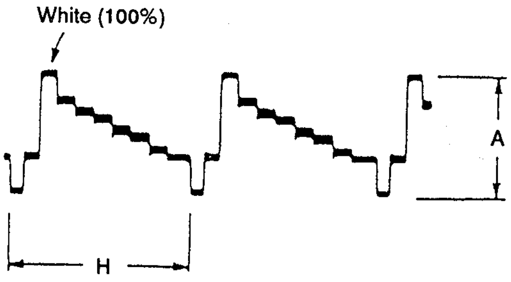


Fig. 6-3-18.

13. Chroma Emphasis Adjustment 1 (VS board)

Emphasis center frequency setting. If deviated, this causes unnatural color.

Mode	Record
Signal	Color bar (CAMERA input)
Measurement Point	Pin ⑧ of IC201 (REC C OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	80, 81
Specified Value	Minimum f_0 component

Adjusting method:

1) Set to the record mode.
2) Set data: 01 to page: 1, address: 00.
3) Set data: 00 to page: 2, address: 00.
4) Set data: 04 to page: 2, address: B0.
5) After memorizing the data of address: 9A of page: 2, set data: 02 to the address.
6) Change the data of page: D, address: 80, and adjust so that the amplitude of the latter section of the chroma signal (red section) becames minimum.
7) Press the PAUSE button of the adjusting remote commander.
8) Set the same data as address: 80 of page: D to address: 81 of page D.
9) Press the PAUSE button of the adjusting remote commander.

Processing after completing adjustments

1) Set the data memorized at step 5) to address: 9A of page: 2.
2) Set data: 00 to page: 2, address: B0.

Minimize the amplitude of the latter section of the red section.

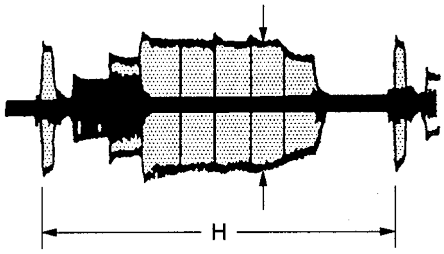


Fig. 6-3-19.

14. Chroma Emphasis Adjustment 2 (VS board)

Emphasis center frequency setting. If deviated, this causes unnatural color.

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-5CSP) Color bar section
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	D
Adjustment Address	81, 80
Specified Value	The path from the blue luminance point to black luminance point should be a straight line.

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: 81, and adjust so that the path from the blue luminance point to black luminance point becames a straight line.
3) Press the PAUSE button of the adjusting remote commander.
4) Set the same data as address: 81 of page: D to address: 80 of page: D.
5) Press PAUSE button of the adjusting remote commander.

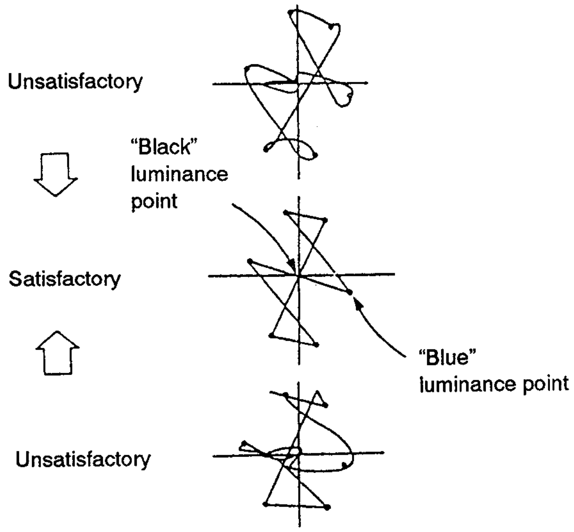


Fig. 6-3-20.

15. Comb Filter Fine Adjustment (VS board)

Set the level and phase of the 2H delayed signal for the comb filter. If deviated, this causes marked occurrence of beets in played back picture.

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-5CSP) Color bar section
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	D
Adjustment Address	71, 84
Specified Value	Minimum color luminance point movement when the "Edit" switch is turned on/off

Note 1: Turn the edit ON/OFF at the menu screen.

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Minimize the movements of the color luminance point when the edit is on/off with the data of page D address 84 changed.
3) Change the data of page: D, address: 71 and minimize the movements of the color luminance point when the edit is on/off
4) Press the PAUSE button of the adjusting remote commander.
5) Repeat steps 2) to 4).

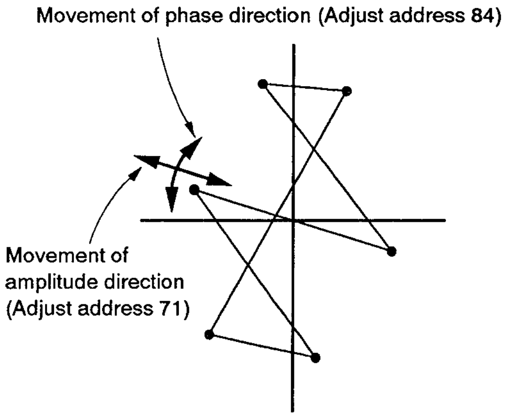

Movement of phase direction (Adjust address 84)
Movement of amplitude direction (Adjust address 71)

Fig. 6-3-21.

16. REC Y Level Adjustment (VS board)

Recording level of luminance signal setting. If deviated, this causes black stretch over modulation noise or color shade.

Mode	Record (SP)
Signal	No signal
Measurement Point	Pin ⑥ of CN102 (REC 2)
Measuring Instrument	Oscilloscope Board width limit: 20 MHz
Adjustment Page	D
Adjustment Address	47, 43, 46, 42
Specified Value	A=130 ± 5 mVp-p

Note 1: Use a normal MP type tape.

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) After memorizing the data of address: 3B of page: D, set data: FF to the address.
3) Set data: FF to address: 43 of page: D, and press the PAUSE button of the adjusting remote commander.
4) Change the data of page: D, address: 47, and adjust so that REC Y level (A) becomes the specified value.
5) Press the PAUSE button of the adjusting remote commander.
6) Set data to address: 42, 43, 46 of page: D as shown in following table.

   (Be sure to press the PAUSE button of the adjusting remote control unit after setting each data.)

Address	Data
42	Same data as address: 47
43	Same data as address: 47
46	Same data as address: 47

7) Set the data memorized at step 2) to address: 3B of page: D and press the PAUSE button of the adjusting remote commander.

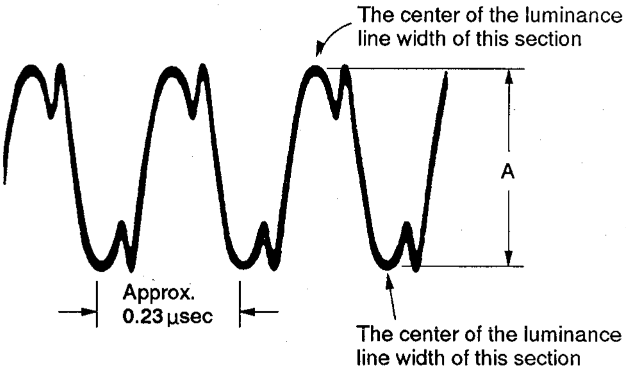

The center of the luminance line width of this section
A
Approx. 0.23 μsec
The center of the luminance line width of this section

Fig. 6-3-22.

17. REC L Adjustment (VS board)

Set the recording levels of the REC AFM signal and REC ATF signal. If the level is too low, the audio S/N will deteriorate, tracking will not be stable, or SP/LP will not be discriminated properly. If too high, color beets will be produced on the self-recording/playback image.

Mode	Record (SP)
Signal	No signal (VIDEO input)
Measurement Point	Pin ⑥ of CN102 (REC 2)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	3B, 39, 3A, 38
Specified Value	A=5.6 ± 1.0 mVp-p

Note 1: Use a MP type tape.
Note 2: AU board is required for this adjustment.
Note 3: For stereo model, don't insert any plug into the right audio input terminal.

Connection:
1) Connect Emitter of Q113 and GND with a jumper wire.
2) Connect Pin ⑤ of IC508 and GND with a 0.01 μF capacitor. (Parts cord: 1-101-004-00)

Adjusting method:
1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: 3B, and adjust so that the REC AFM signal level (A) becomes the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Read the data of page: D, address: 3B, and this data is named D3B.
5) Set data: D3B to address: 39 of page D.
6) Press the PAUSE button of the adjusting remote commander.
7) Convert D3B to decimal notation, and obtain D3B′. (Refer to Table 6-1-3. "Hexadecimal notation-decimal notation conversion table")
8) Culculate D3A′ using following equation (decimal notation calculation).
   D3A′=D3B′−7
9) Convert D3A′ to hexadecimal notation, and obtain D3A.
10) Set data: D3A to address: 3A of page D.
11) Press the PAUSE button of the adjusting remote commander.
12) Set data: D3A to address: 38 of page D.
13) Press the PAUSE button of the adjusting remote commander.
14) Perform "REC CHROMA Level Adjustment".

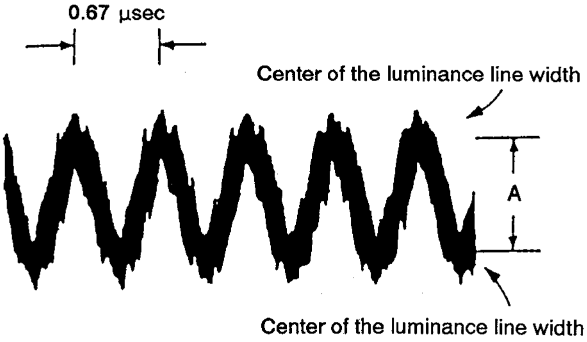

0.67 μsec
Center of the luminance line width
A
Center of the luminance line width

Fig. 6-3-23.

18. REC CHROMA Level Adjustment (VS board)

Set REC CHROMA signal level. If it is lower than its normal level, chroma signal noise in played back picture will increase. If it is set higher, Y signal noises will increase and white modulation noises will be prodused.

Mode	Record (SP)
Signal	Color bar (VIDEO input)
Measurement Point	Pin ⑥ of CN102 (REC 2)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	33, 32, 37, 36
Specified Value	A=23 ± 3 mVp-p

Note 1: Use a MP type tape.

Connection:
1) Connect Emitter of Q113 and GND with a jumper wire.
2) Connect Pin ⑤ of IC508 and GND with a 0.01 μF capacitor. (1-101-004-00)
3) Disconnect AU board.

Adjusting method:
1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: 33, and adjust so that the REC CHROMA signal level (A) becomes the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Read the data of page: D, address: 33, and this data is named D33.
5) Set data: D33 to address: 32 of page D.
6) Press the PAUSE button of the adjusting remote commander.
7) Set data: D33 to address: 36 of page D.
8) Press the PAUSE button of the adjusting remote commander.
9) Set data: D33 to address: 37 of page D.
10) Press the PAUSE button of the adjusting remote commander.

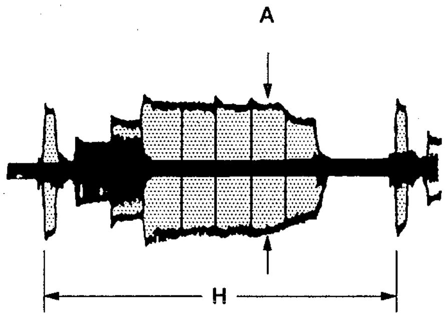


Fig. 6-3-24.

19. REC ATF Level Check (VS board)

Mode	Record (SP)
Signal	No signal
Measurement Point	Pin ⑥ of CN102 (REC 2)
Measuring Instrument	Oscilloscope
Specified Value	A=7.1 ± 1.5 mVp-p

Note 1: Use a MP type tape.

Connection:
1) Connect Emitter of Q113 and GND with a jumper wire.
2) Disconnect AU board.

Adjusting method:
1) Check that the REC ATF signal level (A) satisfise the specified value.

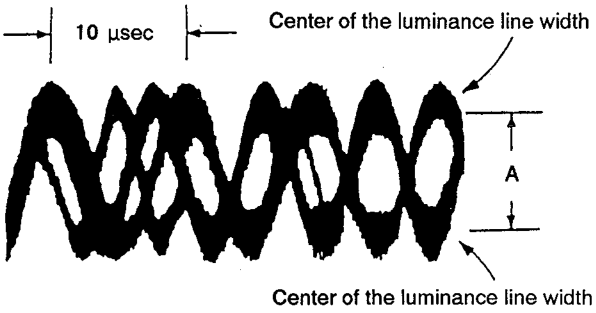

10 µsec
Center of the luminance line width
A
Center of the luminance line width

Fig. 6-3-25.

3-6. Hi8 VIDEO SYSTEM ADJUSTMENTS (CCD-TRV60E/TRV70E, FV 876)

The adjustments of the video system must be performed according to the following adjustment procedure.
The color video signal supplied from the pattern generator is used as the video input signal for adjusting the video system in recording mode. Check that the sync signal and the color burst signal satisfy the specification specified during the adjustment set-up shown in Figs. 6-3-2. and 6-3-3.

[Adjusting procedure]

1) Playback frequency characteristics adjustment
2) Flying erase check
3) VXO oscillation frequency check
4) SYNC AGC level adjustment
5) Comb filter adjustment
6) Emphasis input level adjustment
7) WHITE CLIP check
8) DARK CLIP check
9) DE EMPH level adjustment
10) PB Y out level adjustment
11) Standard 8 mm mode Y FM carrier frequency adjustment
12) Standard 8 mm mode Y FM deviation adjustment
13) Hi8 mode Y FM carrier frequency adjustment
14) Hi8 mode Y FM deviation adjustment
15) Chroma emphasis adjustment 1
16) Chroma emphasis adjustment 2
17) Comb filter fine adjustment
18) REC Y level adjustment
19) REC L adjustment
20) REC CHROMA level adjustment
21) REC ATF level check

1. Playback Frequency Characteristic Adjustment (VS board)

Eliminate the differences in the head characteristics of each channel. If there are differences, flickers and over modulation noises will be produced.

Note 1: The adjusting element for CH2 is shown in parentheses [ ].

Mode	Playback
Signal	Alignment tape: For frequency characteristic adjustment (WR5-7CE)
Measurement Point	CH1: Pin ③ of CN102 (PB RF) EXT TRIG: Pin ④ of CN102 (RF SWP)
Measuring Instrument	Oscilloscope TRIG SLOPE: +, [–]
Adjustment Page	D
Adjustment Address	5A, 5B, 5C, 5D, 5E [5F, 60, 61, 62, 63]
Specified Value	4.5 MHz level: 8.5 MHz level= 3: (2 ± 0.2)

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Press the PAUSE button of the adjusting remote commander.
3) Change the data of address: 5C [61] of page D, and adjust the level ratio of 4.5 MHz and 8.5 MHz of PB RF output waveform to the specified value.
   Note 2: After each address adjustment, be sure to press the PAUSE button of the adjusting remote commander and memorize the data.
4) Read the data of page: D, address: 5C, and this data is named D5C.
5) Read the data of page: D, address: 61, and this data is named D61.
6) Set data to address: 5A to 5E and 5F to 62 of page: D as shown in following table.
   (Be sure to press the PAUSE button of the adjusting remote commander after setting each data.)

Address	Data
5A	D5C
5B	D5C
5D	D5C
5E	D5C+8
5F	D61
60	D61
62	D61
63	D61+8

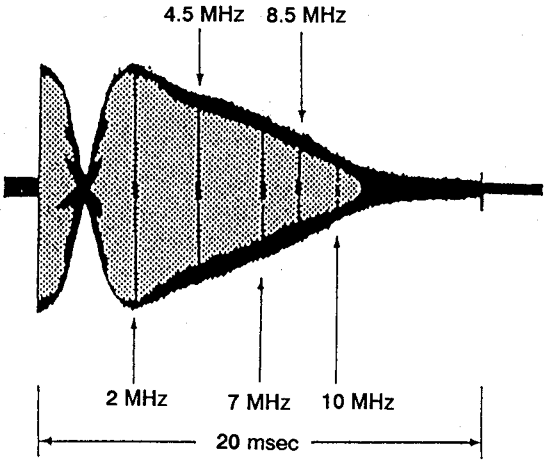

4.5 MHz
8.5 MHz
2 MHz
7 MHz
10 MHz
20 msec

Fig. 6-3-26.

2. Flying Erase Check (VS board)

Mode	Record
Signal	Arbitrary
Measurement Point	Pin ⑫ of CN101 (FE (X))
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Frequency: 8.0 ± 0.5 MHz Voltage: 6.0 ± 1 Vp-p (ME tape) Above 7.0 Vp-p (MP tape)

Checking method:

1) Check that the oscillation frequency and the oscillation voltage satisfieds the specified value.

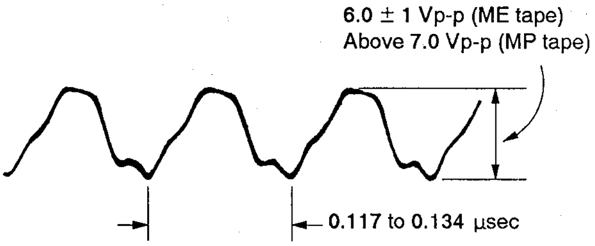

6.0 ± 1 Vp-p (ME tape)
Above 7.0 Vp-p (MP tape)
0.117 to 0.134 μsec

Fig. 6-3-27.

3. VXO Oscillation Frequency Check (VS board)

Mode	Record
Signal	Color bar
Measurement Point	Pin ⑥① of IC201
Measuring Instrument	Frequency counter
Specified Value	4433619 ± 50 Hz

Note: Connect the frequency counter via a high impedance (approximately 10 MΩ) and low capacity (below 10 pF) buffer.

Adjusting method:

1) Check that the oscillation frequency of pin ⑥① of IC201 is 4433619 ± 50 Hz.

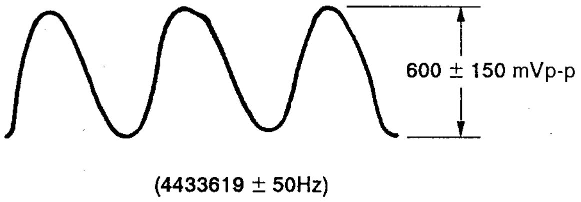

600 ± 150 mVp-p
(4433619 ± 50Hz)

Fig. 6-3-28.

4. SYNC AGC Level Adjustment (VS board)

Adjust so that the Y signal level to be recorded becomes consistent. If it is not consistent, the camera EE image and OA image will be brighter or darker than normal.

Mode	Record
Signal	Color bar (Camera input) Note 1
Measurement Point	Pin ② of CN201 (Y IN/OUT) Note 2
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	70
Specified Value	A=1.00 ± 0.025V

Note 1: The chroma signal input is not required.
Note 2: Connect Pin ② of CN201 and Pin ③ of CN201 (S-Y GND) with a 75Ω resistor.
75Ω resistor (Part code: 1-247-804-11)
Note 3: Insert a plug into the S VIDEO terminal.

Adjusting method:
1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: 70, and adjust so that the Y signal level (A) becomes the specified value.
3) Press the PAUSE button of the adjusting remote commander.

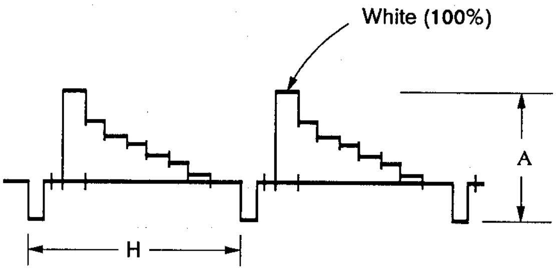


Fig. 6-3-29.

5. Comb Filter Adjustment (VS board)

Mode	Record
Signal	Color bar (VIDEO input)
Measurement Point	Pin ⑭ of IC201 (Y COMB OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	71, 84
Specified Value	Residual chroma component (A) is minimum.

Adjusting method:
1) Set to the VIDEO input mode.
2) Set to the record mode.
3) Set data: 01 to page: 1, address: 00.
4) Change the data of page: D, address: 71, and adjust the residual chroma component (A) to minimum.
5) Change the data of page: D, address 84 so that the residual chroma component becomes minimum.
6) Repeat 4) and 5).
7) Press the PAUSE button of the adjusting remote commander.

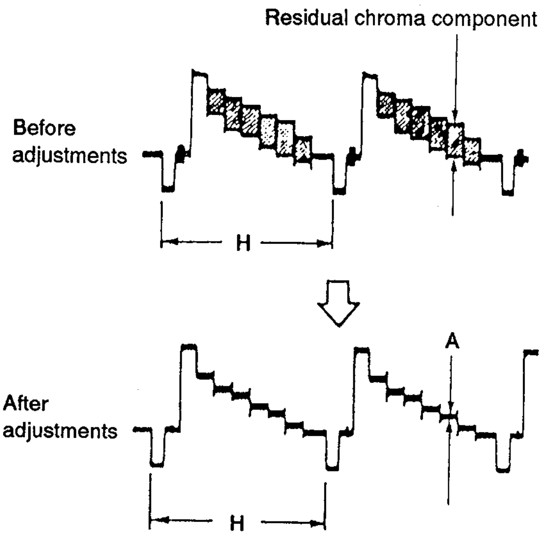


Fig. 6-3-30.

6. Emphasis Input Level Adjustment (VS board)

Y level of emphasis circuit setting. If deviated, this causes too bright or too dark image during play back after recording.

Mode	Record
Signal	Color bar (CAMERA input)
Measurement Point	Pin ⑤ of IC201 (EMPH IN) or Pin ⑤ of IC205
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	82
Specified Value	A=0.50 ± 0.01V

Note 1: The chroma signal input is not required.

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: 82, and adjust so that the Y signal level (A) becomes the specified value.
3) Press the PAUSE button of the adjusting remote commander.

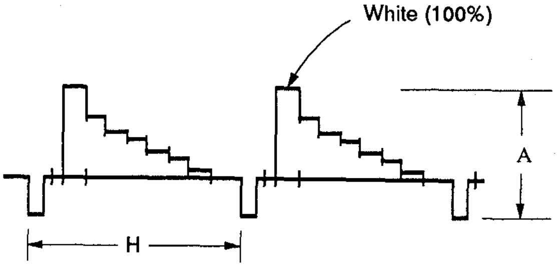


Fig. 6-3-31.

7. WHITE CLIP Check (VS board)

Mode	Record (SP)
Signal	Color bar (CAMERA input)
Measurement Point	Pin ㊴ of IC201 (Y RF OUT)
Measuring Instrument	Oscilloscope
Specified Value	Hi8 mode ME tape: A=185 ± 10% Hi8 mode Hi8 MP tape: A=175 ± 10% Standard 8 mm mode MP tape: A=220 ± 10%

Note 1: The chroma signal input is not required.

Checking method:

1) Set to the record mode.
2) Set data: 00 to page: 2, address: 00.
3) Set data: 04 to page: 2, address: B0.
4) After memorizing the data of address: 9A of page: 2, set data: 01 to the address.
5) Check that the white clip level (A) satisfies the specified value.

Processing after completing adjustments

1) Set the data memorized at step 4) to address: 9A of page: 2.
2) Set data: 00 to page: 2, address: B0.

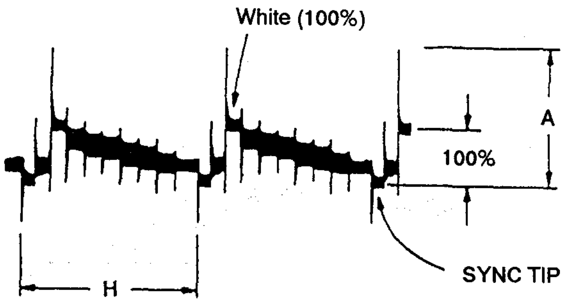


Fig. 6-3-32.

8. DARK CLIP Check (VS board)

Mode	Record
Signal	Color bar (CAMERA input)
Measurement Point	Pin ㊴ of IC201 (Y RF OUT)
Measuring Instrument	Oscilloscope
Specified Value	Hi8 mode ME tape: A=47 ± 10% Hi8 mode Hi8 MP tape: A=40 ± 10% Standard 8 mm mode MP tape: A=60 ± 10%

Note 1: The chroma signal input is not required.

Checking method:

1) Set to the record mode.
2) Set data: 00 to page: 2, address: 00.
3) Set data: 04 to page: 2, address: B0.
4) After memorizing the data of address: 9A of page: 2, set data: 01 to the address.
5) Check that the dark clip level (A) satisfies the specified value.

Processing after completing adjustments

1) Set the data memorized at step 4) to address: 9A of page: 2.
2) Set data: 00 to page: 2, address: B0.

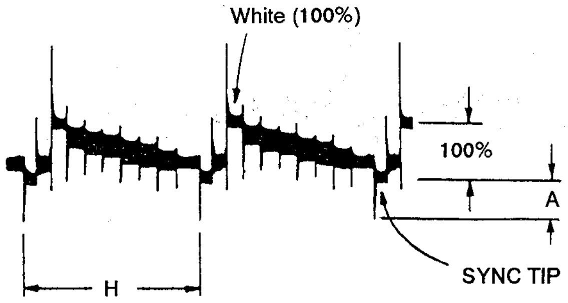


Fig. 6-3-33.

9. DE EMPH Level Adjustment (VS board)

De-emphasis input level setting. If deviated, this causes excessive brightness or darkness.

Mode	Playback
Signal	Alignment tape: For checking operations Color bar section Standard 8 mm mode: WR5-5CSP Hi8 mode: WR5-8CSE
Measurement Point	Pin ⑰ of IC201 (DL IN 2)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	86, 87
Specified Value	A=0.50 ± 0.01V

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Playback the color bar section of the Standard 8 mm mode alignment tape (WR5-5CSP).
3) Change the data of page: D, address: 87, and adjust so that the Y signal level (A) becomes the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Playback the color bar section of the Hi8 mode alignment tape (WR5-8CSE).
6) Change the data of page: D, address: 86 and adjust so that the Y signal level (A) becames specified value.
7) Press the PAUSE button of the adjusting remote commander.
8) Perform "PB Y OUT Level adjustment".

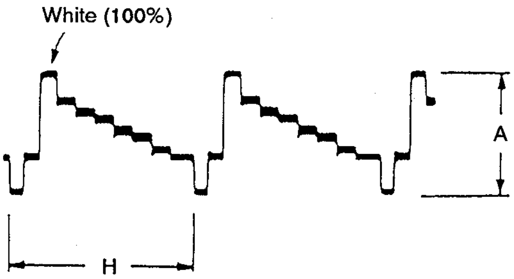


Fig. 6-3-34.

10. PB Y OUT Level Adjustment (VS board)

PB LINE OUT Y level setting. If deviated, this causes too bright or too dark picture.

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-8CSE) Color bar section
Measurement Point	Pin ② of CN201 (Y IN/OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	83
Specified Value	A=1.0 ± 0.05V

Note 1: Connect Pin ② of CN201 and Pin ③ of CN201 (S-Y GND) with a 75Ω resistor.
(Part code: 1-247-804-11)

Note 2: Insert a plug into the S VIDEO terminal.

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: 83, and adjust so that the video signal level (A) becomes the specified value.
3) Press the PAUSE button of the adjusting remote commander.

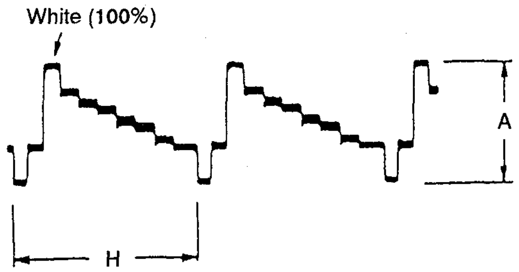


Fig. 6-3-35.

11. Standard 8 mm Mode Y FM Carrier Frequency Adjustment (VS board)

Standard 8 mm mode FM carrier frequency of REC Y setting. If deviated, this caused blurred played back picture or deteriorated resolution.

Mode	Record
Signal	No signal (CAMERA input)
Measurement Point	Pin ㊴ of IC201 (Y RF OUT)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	75
Specified Value	4.385 ± 0.01 MHz

Adjusting method:

1) Insert a normal MP type tape.
2) Set data: 01 to page: 1, address: 00.
3) Change the data of page: D, address: 75, and adjust so that the Y FM carrier frequency becomes the specified value.
4) Press the PAUSE button of the adjusting remote commander.

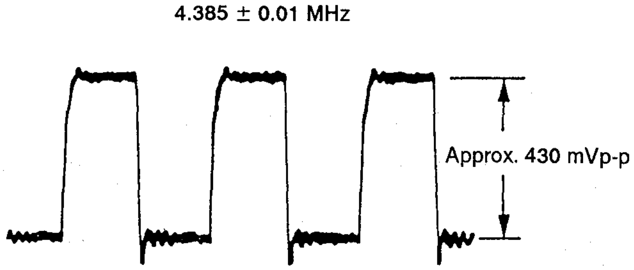


Fig. 6-3-36.

12. Standard 8 mm Mode Y FM Deviation Adjustment (VS board)

Standard 8 mm mode FM deviation of REC Y setting. If deviated, this causes too bright/dark image, or marked occurrence of black picture or deteriorated resolution.

Mode	Record and playback
Signal	Color bar (CAMERA input)
Measurement Point	Pin ⑰ of IC201 (DL IN 2)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	77
Specified Value	A=0.50 ± 0.01V

Note 1: Check that "Emphasis Input Level Adjustment", have been completed.

Note 2: The chroma signal input is not required.

Adjusting method:

1) Insert a normal MP type tape.
2) Set data: 01 to page: 1, address: 00.
3) Record the color bar signal.
4) Playback the recorded signal.
5) Check the playback signal level (A).
   Specification:A=0.50 ± 0.01V
6) If the specification is not satisfied, change the data of page: D, address: 77, and repeat steps 3) to 5).

Playback signal level	Changing the data
When smaller than the specified value	Increase
When bigger than the specified value	Decrease

7) Press the PAUSE button of the adjusting remote commander.
8) Perform "Normal Mode Y FM Carrier Frequency Adjustment".

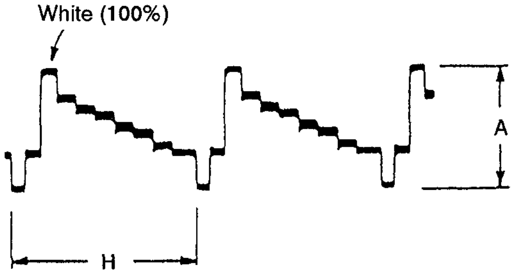


Fig. 6-3-37.

13. Hi8 Mode Y FM Carrier Frequency Adjustment (VS board)

Hi8 mode FM carrier frequency of REC Y setting. If deviated, this caused blurred played back picture or deteriorated resolution.

Mode	Record
Signal	No signal (CAMERA input)
Measurement Point	Pin ㊴ of IC201 (Y RF OUT)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	74
Specified Value	6.000 ± 0.01 MHz

Adjusting method:

1) Insert a ME type tape.
2) Set data: 01 to page: 1, address: 00.
3) Change the data of page: D, address: 74, and adjust so that the Y FM carrier frequency becomes the specified value.
4) Press the PAUSE button of the adjusting remote commander.

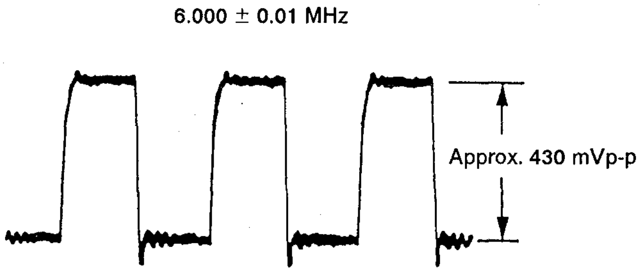


Fig. 6-3-38.

14. Hi8 Mode Y FM Deviation Adjustment (VS board)

Hi8 mode FM deviation of REC Y setting. If deviated, this causes too bright/dark image, or marked occurrence of black picture or deteriorated resolution.

Mode	Record and playback
Signal	Color bar (CAMERA input)
Measurement Point	Pin ⑰ of IC201 (DL IN 2)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	76
Specified Value	A=0.50 ± 0.01V

Note 1: Check that "Emphasis Input Level Adjustment", have been completed.

Note 2: The chroma signal input is not required.

Adjusting method:

1) Insert a ME type tape.
2) Set data: 01 to page: 1, address: 00.
3) Record the color bar signal.
4) Playback the recorded signal.
5) Check the playback signal level (A).
   Specification: A=0.50 ± 0.01V
6) If the specification is not satisfied, change the data of page: D, address: 76, and repeat steps 3) to 5).

Playback signal level	Changing the data
When smaller than the specified value	Increase
When bigger than the specified value	Decrease

7) Press the PAUSE button of the adjusting remote commander.
8) Perform "Hi8 Mode Y FM Carrier Frequency Adjustment".

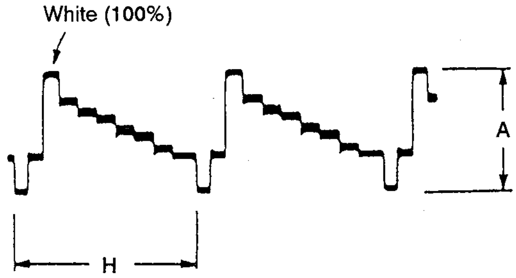


Fig. 6-3-39.

15. Chroma Emphasis Adjustment 1 (VS board)

Emphasis center frequency setting. If deviated, this causes unnatural color.

Mode	Record
Signal	Color bar (CAMERA input)
Measurement Point	Pin ⑧ of IC201 (REC C OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	80, 81
Specified Value	Minimum f_0 component

Adjusting method:

1) Set to the record mode.
2) Set data: 01 to page: 1, address: 00.
3) Set data: 00 to page: 2, address: 00.
4) Set data: 04 to page: 2, address: B0.
5) After memorizing the data of address: 9A of page: 2, set data: 02 to the address.
6) Change the data of page: D, address: 80, and adjust so that the amplitude of the latter section of the chroma signal (red section) becames minimum.
7) Press the PAUSE button of the adjusting remote commander.
8) Set the same data as address: 80 of page: D to address: 81 of page D.
9) Press the PAUSE button of the adjusting remote commander.

Processing after completing adjustments

1) Set the data memorized at step 5) to address: 9A of page: 2.
2) Set data: 00 to page: 2, address: B0.

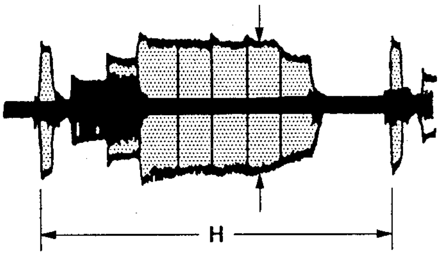

Minimize the amplitude of the latter section of the red section.

Fig. 6-3-40.

16. Chroma Emphasis Adjustment 2 (VS board)

Emphasis center frequency setting. If deviated, this causes unnatural color.

Mode	Playback
Signal	Alignment tape: For checking operations Color bar section
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	D
Adjustment Address	81, 80
Specified Value	The path from the blue luminance point to black luminance point should be a straight line.

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: 81, and adjust so that the path from the blue luminance point to black luminance point becames a straight line.
3) Press the PAUSE button of the adjusting remote commander.
4) Set the same data as address: 81 of page: D to address: 80 of page: D.
5) Press PAUSE button of the adjusting remote commander.

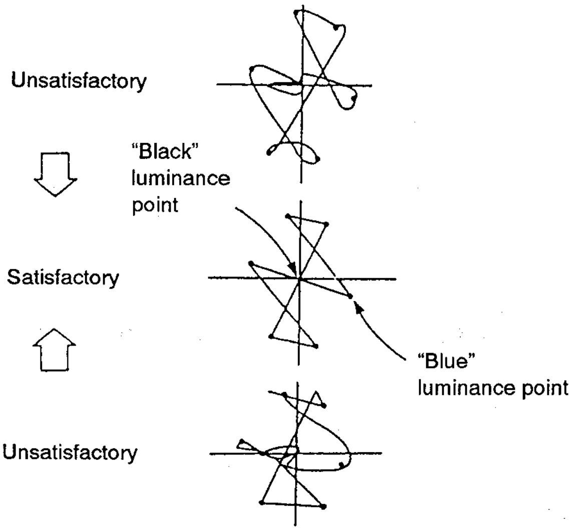

Unsatisfactory
"Black" luminance point
Satisfactory
"Blue" luminance point
Unsatisfactory

Fig. 6-3-41.

17. Comb Filter Fine Adjustment (VS board)

Set the level and phase of the 2H delayed signal for the comb filter. If deviated, this causes marked occurrence of beets in played back picture.

Mode	Playback
Signal	Alignment tape: For checking operations Color bar section
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	D
Adjustment Address	71, 84
Specified Value	Minimum color luminance point movement when the "Edit" switch is turned on/off

Note 1: Turn the edit ON/OFF at the menu screen.

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Minimize the movements of the color luminance point when the edit is on/off with the data of page: D, address: 84 changed.
3) Change the data of page: D, address: 71 and minimize the movements of the color luminance point when the edit is on/off
4) Press the PAUSE button of the adjusting remote commander.
5) Repeat steps 2) to 4).

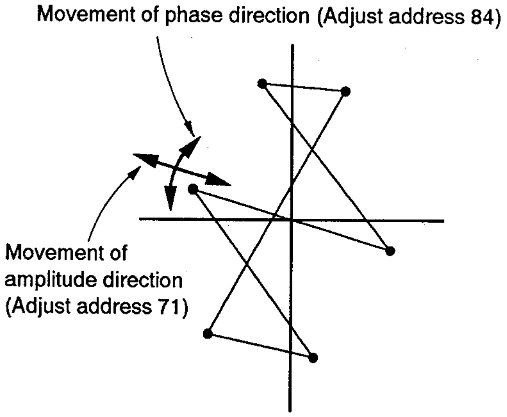

Movement of phase direction (Adjust address 84)
Movement of amplitude direction (Adjust address 71)

Fig. 6-3-42.

18. REC Y Level Adjustment (VS board)

Recording level of luminance signal setting. If deviated, this causes black stretch over modulation noise or color shade.

Mode	Record (SP)
Signal	No signal
Measurement Point	Pin ⑥ of CN102 (REC 2)
Measuring Instrument	Oscilloscope Board width limit: 20 MHz
Adjustment Page	D
Adjustment Address	44, 40, 45, 41, 47, 43, 46, 42
Specified Value	A=153 ± 5 mVp-p

Note: Use a ME type tape.

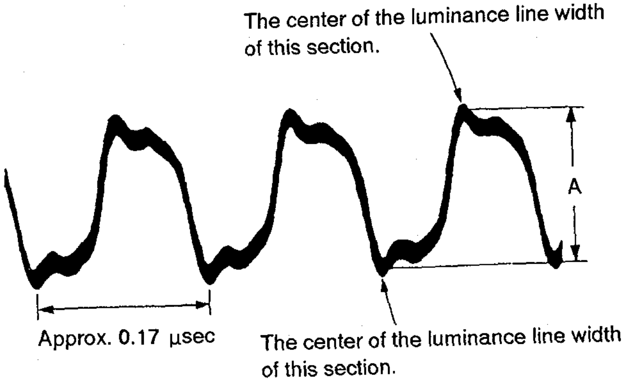

The center of the luminance line width of this section.
A
Approx. 0.17 μsec
The center of the luminance line width of this section.

Fig. 6-3-43.

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) After memorizing the data of address: 3A of page: D, set data: FF to the address.
3) Set data: FF to page: D, address: 40 and press the PAUSE button of the adjusting remote commander.
4) Change the data of page: D, address: 44, and adjust so that REC Y level (A) becomes the specified value.
5) Press the PAUSE button of the adjusting remote commander.
6) Read the data of page: D, address: 44 and this data is named D44.
7) Convert D44 to decimal notation, and obtain D44'. (Refer to Table 6-1-3. "Hexadecimal notation – decimal notataion conversion table")
8) Calculate D45', D46' and D47' using following equations (decimal notation calculation).

   D45'=D44'+ 20

   D46'=D44'+ 5

   D47'=D44'+14
9) Convert D45', D46' and D47' to hexadecimal notation and obtain D45, D46 and D47.
10) Set data to address: 40, 41, 42, 43, 45, 46 and 47 of page: D as shown in following table.

   (Be sure to press the PAUSE button of the adjusting remote control unit after setting each data.)
11) Set the data memorized at step 2) to address: 3A of page: D and press the PAUSE button of the adjusting remote commander.

Address	Data
40	D44
41	D45
42	D46
43	D47
45	D45
46	D46
47	D47

19. REC L Adjustment (VS board)

Set the recording levels of the REC AFM signal and REC ATF signal. If the level is too low, the audio S/N will deteriorate, tracking will not be stable, or SP/LP will not be discriminated properly. If too high, color beets will be produced on the self-recording/playback image.

Mode	Record (SP)
Signal	No signal (VIDEO input)
Measurement Point	Pin ⑥ of CN102 (REC 2)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	3A, 38, 3B, 39
Specified Value	A=8.4 ± 1.0 mVp-p

Note 1: Use a ME type tape.
Note 2: AU board is required for this adjustment.
Note 3: Do not insert any plug into the right audio input terminal.

Connection:
1) Disconnect HE board.
2) Connect Pin ⑤ of IC508 and GND with a 0.01 µF capacitor. (Parts code: 1-101-004-00)

Adjusting method:
1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: 3A, and adjust so that the REC AFM signal level (A) becomes the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Read the data of page: D, address: 3A, and this data is named D3A.
5) Set data: D3A to address: 38 of page D.
6) Press the PAUSE button of the adjusting remote commander.
7) Convert D3A to decimal notation, and obtain D3A′. (Refer to Table 6-1-3. "Hexadecimal notation-decimal notation conversion table")
8) Culculate D3B′ using following equation (decimal notation calculation).
   D3B′=D3A′+ 9
9) Convert D3B′ to hexadecimal notation, and obtain D3B.
10) Set data: D3B to address: 3B of page D.
11) Press the PAUSE button of the adjusting remote commander.
12) Set data: D3B to address: 39 of page D.
13) Press the PAUSE button of the adjusting remote commander.
14) Perform "REC CHROMA Level Adjustment".

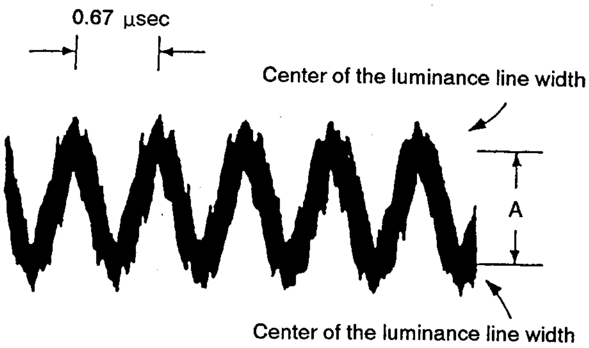

0.67 µsec
Center of the luminance line width
A
Center of the luminance line width

Fig. 6-3-44.

20. REC CHROMA Level Adjustment (VS board)

Set REC CHROMA signal level. If it is lower than its normal level, chroma signal noise in played back picture will increase. If it is set higher, Y signal noises will increase and white modulation noises will be prodused.

Mode	Record (SP)
Signal	Color bar (CAMERA input)
Measurement Point	Pin ⑥ of CN102 (REC 2)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	30, 31, 32, 33, 34, 35, 36, 37
Specified Value	A=32 ± 3 mVp-p

Note 1: Use a ME type tape.

Connection:
1) Disconnect HE board.
2) Connect Pin ⑤ of IC508 and GND with a 0.01 μF capacitor. (Parts code: 1-101-004-00)
3) Disconnect AU board.

Adjusting method:
1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: 30, and adjust so that the REC CHROMA signal level (A) becomes the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Read the data of page: D, address: 30, and this data is named D30.
5) Set data to address: 31 to 37 of page: D as shown in following table.

(Be sure to press the PAUSE button of the adjusting remote commander after setting each data.)

Address	Data
31	D30
32	D30
33	D30
34	D30
35	D30
36	D30
37	D30

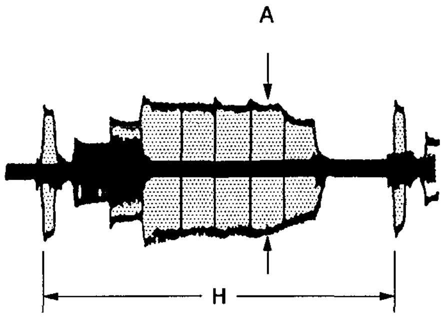


Fig. 6-3-45.

21. REC ATF Level Check (VS board)

Mode	Record (SP)
Signal	No signal
Measurement Point	Pin ⑥ of CN102 (REC 2)
Measuring Instrument	Oscilloscope
Specified Value	A=9.4 ± 1.5 mVp-p

Note 1: Use a ME type tape.

Connection:
1) Disconnect HE board.
2) Disconnect AU board.

Adjusting method:
1) Check that the REC ATF signal level (A) satisfise the specified value.

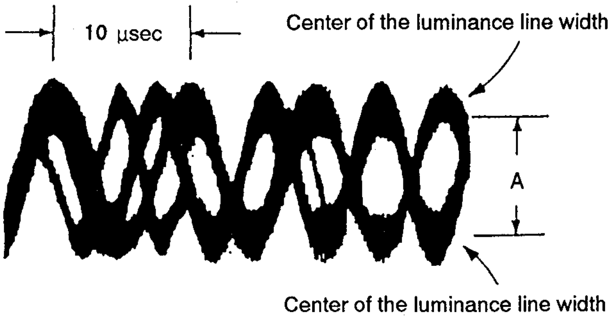


Fig. 6-3-46.

3-7. LCD SYSTEM ADJUSTMENTS

Note 1: The backlight (fluorescent tube) is driven by a 700 Vp-p, 70 kHz AC power supply.
Therefore, be careful not to touch the backlight holder as you will receive an electric shock.

Note 2: When replacing the LCD unit, ensure there will be no damages by static electricity.

Note 3: < >: Items for the 3 inches LCD model.
(CCD-TRV30E/TRV40E/TRV60E, FV 836)
[ ]: Items for the 4 inches LCD model.
(CCD-TRV50E/TRV70E, FV 876)

Note 4: Set the BRIGHT knob to the center click position.

[Adjusting connector]

Most measuring points for adjusting the view-finder are concentrated at CN101 of the <PD-60> [PD-62] board. Connect the measuring equipments via the measuring pin tool. The following table lists the pin numbers and signal names of CN101.

Pin No.	Signal Name	Pin No.	Signal Name
1	VB	2	<–8V> [–7.5V]
3	VG	4	NTSC/PAL
5	VR	6	SPD
7	SYNC	8	HSY
9	GND	10	GND

Table 6-3-4.

1. Multi CPC jig Parts Code: J-6082-311-A
or Measuring pin tool for LCD Parts Code: J-6082-192-A

[Power supply voltage]

Adjust the power supply voltage for the battery terminal so that Pin ⑩ of the CN102 of the <PD-60> [PD-62] board (LCD UNREG) become 6.5 ± 0.1 Vdc.

[Video Input Signal for Adjusting]

If the signal column specifies "Color bar signal whose chroma signal and burst signal are turned off", input a color bar signal whose chroma signal and burst signal have been turned off to the video terminal as the video input signal for adjusting. Check that the input signal level is 1.0 Vp-p before adjusting. (Terminated at 75Ω)

Note: Set the REC mode and check the signal level.

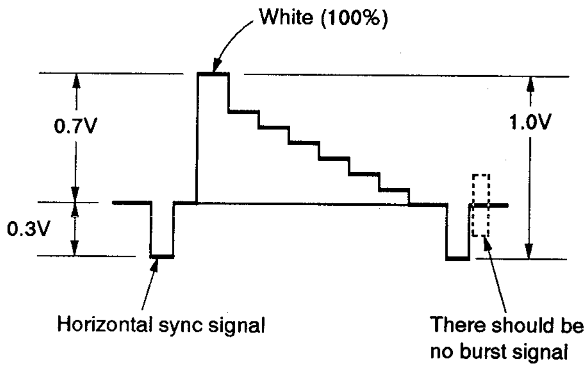


Fig. 6-3-47. Color bar signal whose chroma signal and burst signals are turned off

1. EVR Initial Data Input

Mode	STOP
Signal	Arbitary
Adjustment Page	D

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Select page D, and input the data in the following table.
Note: To write in the nonvolatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time the data is set.

Address	Data
B0	<63> [6B]
B1	<65> [83]
B2	<8A> [96]
B3	<85> [8A]
B4	<6D> [77]
B5	<96> [8A]
B6	<90> [B0]
B7	<AF> [A6]
B8	<83> [7F]
B9	<83> [7F]
BA	<84> [C0]
BB	<92> [A5]

Note: Never change the EEPROM data for replacing <IC105> [IC104] etc. besides in case of necessity.

2. –8V Check (PD-60 board) (3 inches LCD model)

Mode	Record
Signal	Color bar signal whose chroma signal and burst signal are turned off
Measurement Point	Pin ② of CN101
Measuring Instrument	Digital voltmeter
Specified Value	–8.0 ± 0.4 Vdc

3. –7.5V Adjustment (PD-62 board) (4 inches LCD model)

Mode	Record
Signal	Color bar signal whose chroma signal and burst signal are turned off
Measurement Point	Pin ② of CN101
Measuring Instrument	Digital voltmeter
Adjustment Element	RV002
Specified Value	–7.5 ± 0.1 Vdc

Adjustment method:

1) Adjust the voltage to specified value with RV002.

4. Bright Adjustment (PD-60/62 board)

Adjust to the proper LCD panel driving video signal level.
If it is not correct, the image will be saturated (whitish) or blackish.

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ③ of CN101 (VG)
Measuring Instrument	Oscilloscope External trigger: < Pin ⑮ of W101 > [Pin ⑦ of IC102]
Adjustment Page	D
Adjustment Address	B0
Specified Value	<A=4.8 ± 0.1V> [A=3.8 ± 0.1V]

Note: Check that the BRIGHT knob is set to the center click position.

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: B0, and adjust the amplitude level (A) of the VG signal to the specified value. Amplitude: Level difference between the reverse waveform pedestal and non-reversed waveform pedestal.
3) Press the PAUSE button of the adjusting remote commander.

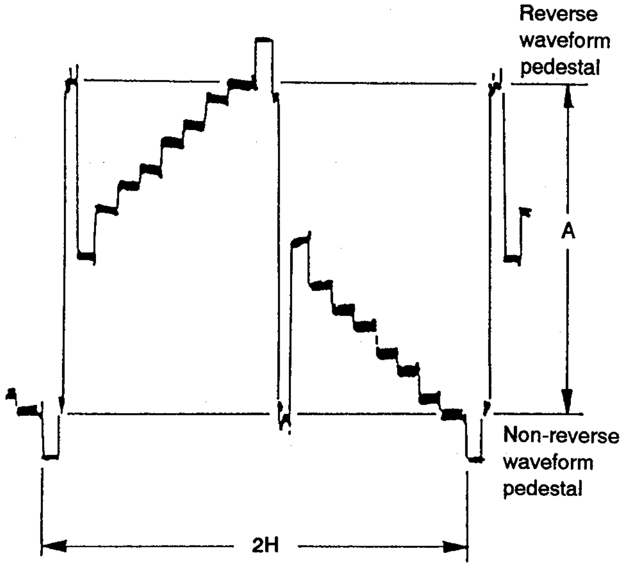


Fig. 6-3-48.

5. Contrast Adjustment (PD-60/62 board)

Set the contrast of the image.

If the contrast is not correct, the image will be blur (whitish) or saturated.

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ③ of CN101 (VG)
Measuring Instrument	Oscilloscope External trigger: <Pin ⑮ of W101> [Pin ⑦ of IC102]
Adjustment Page	D
Adjustment Address	B5
Specified Value	<A=3.2 ± 0.1V> [A=3.1 ± 0.1V]

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: B5, and adjust the voltage (A) between the white (100%) and pedestal to the specified value.
3) Press the PAUSE button of the adjusting remote commander.

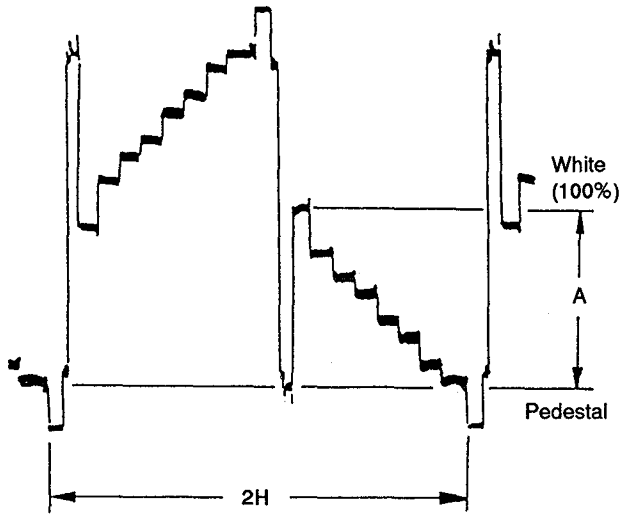


Fig. 6-3-49.

6. Color Adjustment (PD-60/62 board)

Set the standard color level.

If the level is not correct, the image will be too light or dark.

Mode	Record
Signal	Color bar
Measurement Point	Pin ③ of CN101 (VG)
Measuring Instrument	Oscilloscope External trigger: < Pin ⑮ of W101 > [Pin ⑦ of IC102]
Adjustment Page	D
Adjustment Address	B1
Specified Value	A=0 ± 0.1V

Adjusting method:

1) Set data: 01 to page 1, address: 00.
2) Change the data of page: D, address: B1, and adjust so that the level difference (A) of yellow and green section becames minimum.
3) Press the PAUSE button of the adjusting remote control unit.

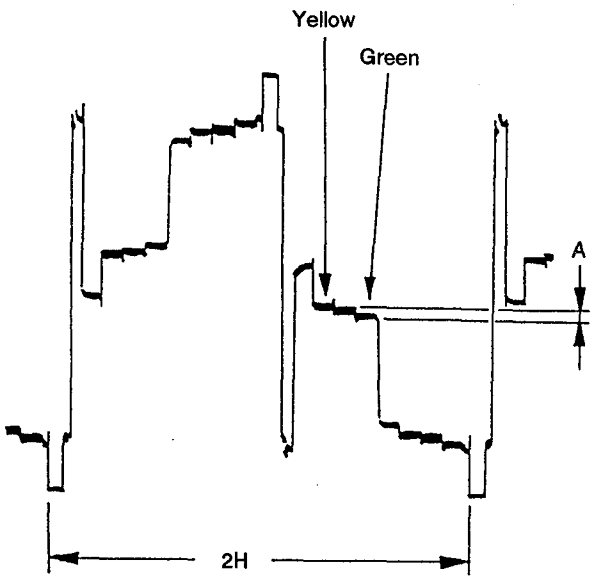


Fig. 6-3-50.

7. Burst Cleaning Adjustment (PD-60/62 board)

Adjust to the optimum PAL chroma signal demodulation phase. If the phase is not correct, moire distortion and noises will stand out.

Mode	Record
Signal	Color bar
Measurement Point	Pin ① of CN101 (VB)
Measuring Instrument	Oscilloscope External trigger: < Pin ⑮ of W101 > [Pin ⑦ of IC102]
Adjustment Page	D
Adjustment Address	B2
Specified Value	Minimum amplitude of the flicker of the red section

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: B2, and adjust so that the amplitude of the flicker of the red section (A) becames minimum.
3) Press the PAUSE button of the adjusting remote control unit.

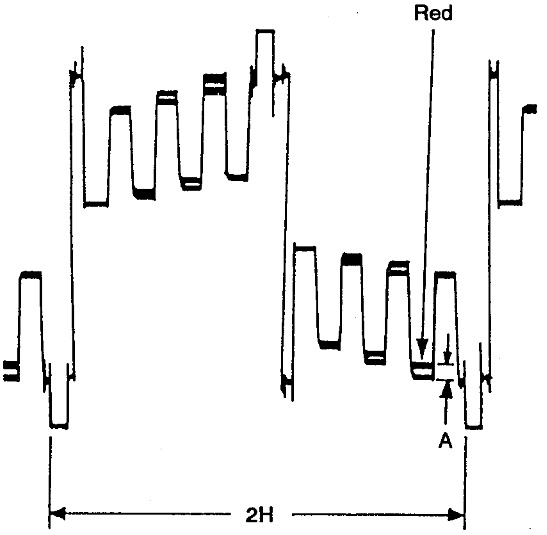


Fig. 6-3-51.

8. V COM Adjustment

Adjust to the proper DC bias of the common polarity drive signal of the LCD panel. If it is not correct, the image will be rough, flickers will be produced easily, and vertical lines will stand out.

Mode	Playback • pause
Signal	Alignment tape: For checking operations (WR5-5CSP) Color bar section
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	B7
Specified Value	

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: B7, and adjust so that the vertical lines with intervals of 3 dots between them at the noise bar disappears.
3) Press the PAUSE button of the adjusting remote commander.

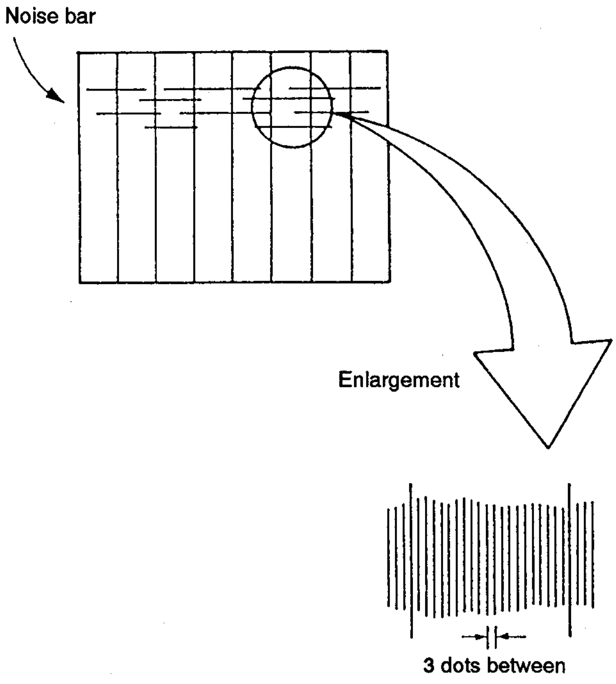


Fig. 6-3-52.

9. White Balance Preset Adjustment (1) (PD-60/62 board)

White balance rough adjustment (1)

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	CH1: Pin ③ of CN101 (VG) CH2: Pin ⑤ of CN101 (VR)
Measuring Instrument	Oscilloscope External trigger: < Pin ⑮ of W101 > [Pin ⑦ of IC102]
Adjustment Page	D
Adjustment Address	B3
Specified Value	Amplitude level difference between VR and VG signals=0 ± 0.1V

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: B3 and equalize the amplitude of VR and VG signal.
   Amplitude: Level difference between the reverse waveform pedestal and non-reverse waveform pedestal.
3) Press the PAUSE button of the adjusting remote commander.

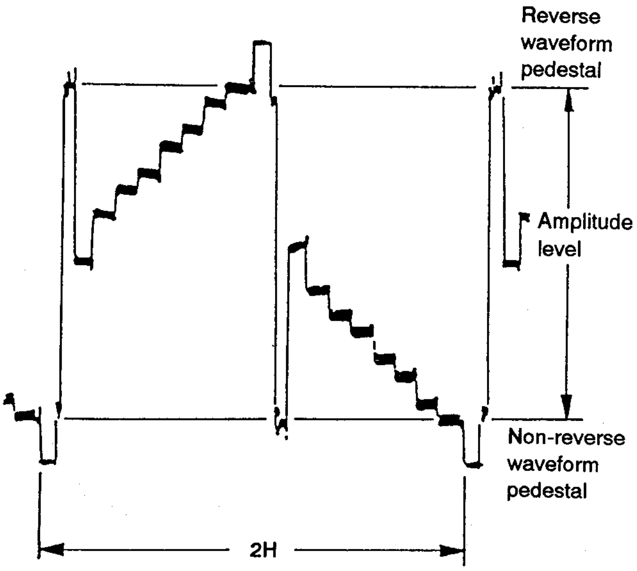


Fig. 6-3-53.

10. White Balance Preset Adjustment (2) (PD-60/62 board)

White balance rough adjustment (2)

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	CH1: Pin ③ of CN101 (VG) CH2: Pin ① of CN101 (VB)
Measuring Instrument	Oscilloscope External trigger: < Pin ⑮ of W101 > [Pin ⑦ of IC102]
Adjustment Page	D
Adjustment Address	B4
Specified Value	Amplitude level difference between VB and VG signals=0 ± 0.1V

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: B4 and equalize the amplitude of VB and VG signal.
   Amplitude: Level difference between the reverse waveform pedestal and non-reverse waveform pedestal.
3) Press the PAUSE button of the adjusting remote commander.

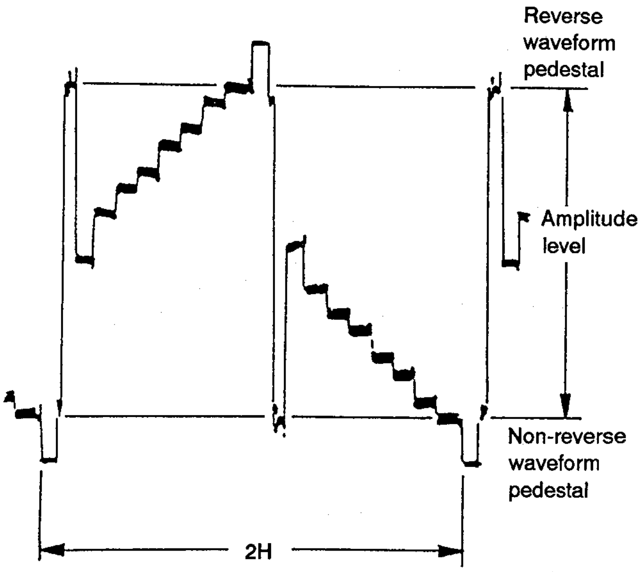


Fig. 6-3-54.

11. White Balance Adjustment

Adjust to the proper white balance level.
If it is not correct, the color reproducibility of the LCD panel will be poor.

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	B3, B4
Specified Value	The display should not be colored

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Check that the LCD display is not colored. If it is, change the data of address: B3 and address: B4 of page: D, and adjustment the display is not colored.
3) Press the PAUSE button of the adjusting remote commander.

12. VCO Adjustment (PD-60/62 board)

Set the free running frequency of the VCO.
If it is not correct, the image will waver.

Mode	STOP
Signal	No signal
Measurement Point	Pin ⑧ of CN101 ($\overline{\text{HSY}}$)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	B6
Specified Value	f=15625 ± 30 Hz

Connections for 3 inches LCD model:

1) Connect Emitter of Q110 and GND with a jumper wire.

Connections for 4 inches LCD model:

1) Connect Emitter of Q109 and GND with a jumper wire.

Adjusting method:

1) Change the data of page: D, address: B6 and adjust the frequency to the specified value.
2) Press the PAUSE button of the adjusting remote commander.

13. Horizontal Display Position Adjustment (PD-60/62 board)

Adjust the position of the image.
If its position is not correct, it will slip to the right or left.

Mode	Record
Signal	Color bar
Measurement Point	CH1: Pin ⑦ of CN101 (H SYNC) CH2: Pin ⑥ of CN101 (SPD)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	BA
Specified Value	<T=2.9 ± 0.2 μsec> [T=3.95 ± 0.1 μsec]

Note for 4 inches LCD model:

1) Turn the LCD unit and set up the MONITOR mode.
2) Set to the mirror mode.

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: BA, and adjust the delay time (T) to the specified value.
3) Press the PAUSE button of the adjusting remote commander.

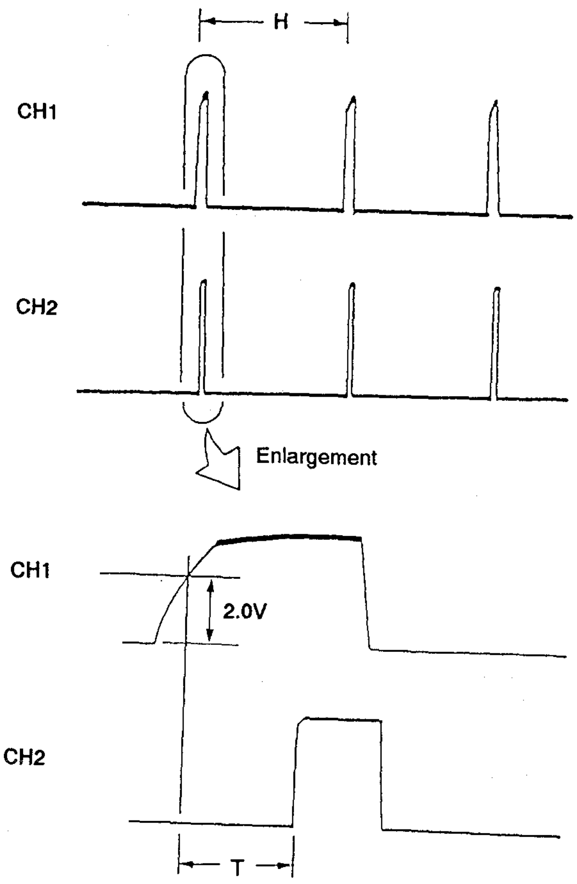


Fig. 6-3-55.

3-8. STEREO AUDIO SYSTEM ADJUSTMENT (CCD-TRV50E/TRV60E/TRV70E, FV 876)

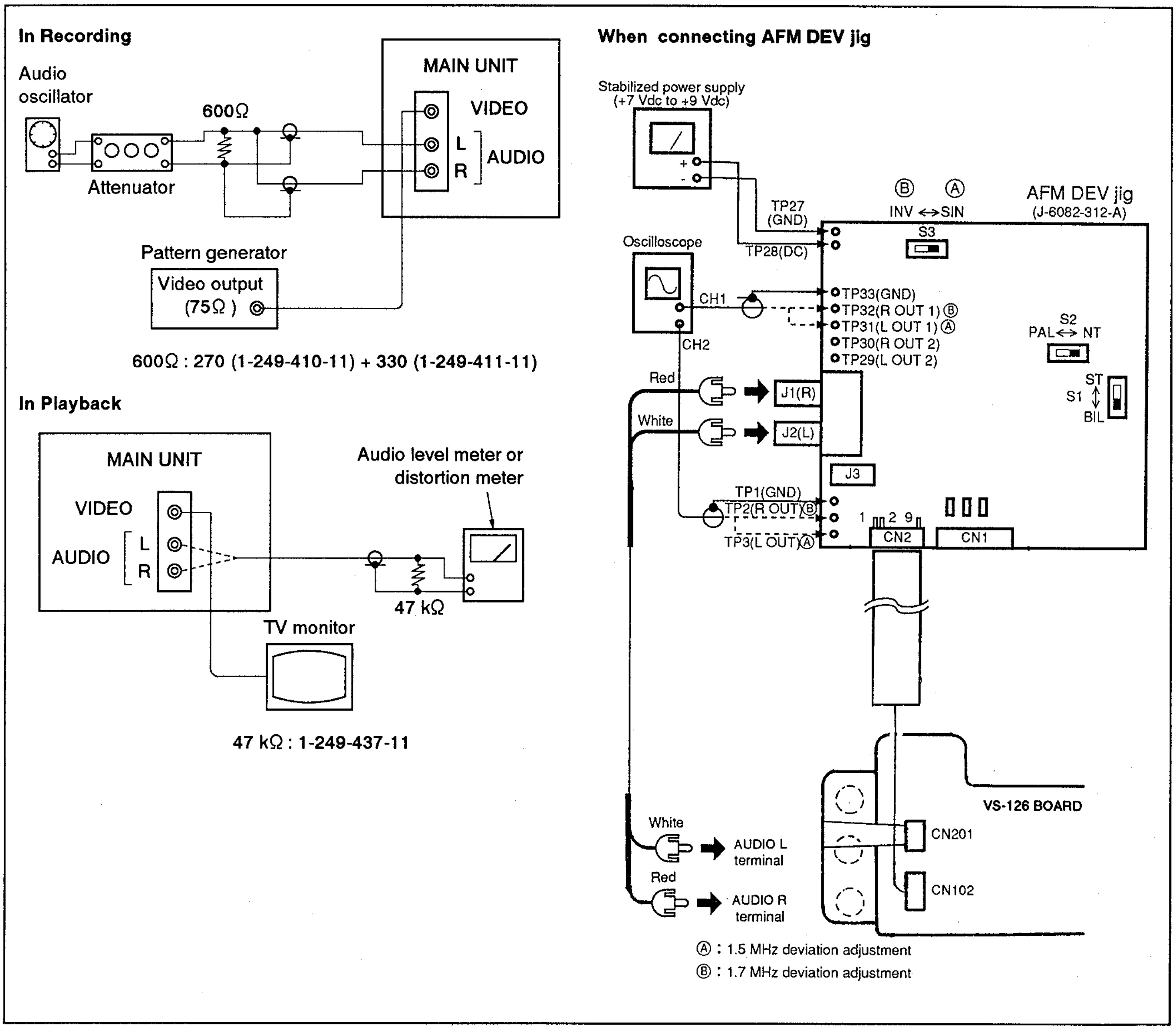
- Perform the adjustment using the color bar signal as a video signal input for VIDEO terminal.
- Unless specified otherwise, use a normal MP tape.
- The items to be adjusted for the R channel will be indicated within the [ ], in regard to the adjusting items to be adjusted for both L and R channels.
- Set the Hi-Fi sound switch in the menu display to "stereo" position unless specified otherwise.

[Connecting the measuring instruments for the audio]
Connect the audio system measuring instruments in addition to the video system measuring instruments as shown in Fig. 6-3-56, and perform adjustments at the power switch [VTR or PLAYER] position.

In Recording

In Playback

When connecting AFM DEV jig


Audio oscillator
Attenuator
600Ω
MAIN UNIT
VIDEO
L
R
AUDIO
Pattern generator
Video output
(75Ω)
MAIN UNIT
VIDEO
AUDIO
L
R
Audio level meter or distortion meter
47 kΩ
TV monitor
Stabilized power supply
(+7 Vdc to +9 Vdc)
+
-
TP27
(GND)
TP28(DC)
Oscilloscope
CH1
CH2
Ⓑ Ⓐ
INV ↔ SIN
S3
AFM DEV jig
(J-6082-312-A)
TP33(GND)
TP32(R OUT 1)Ⓑ
TP31(L OUT 1)Ⓐ
TP30(R OUT 2)
TP29(L OUT 2)
S2
PAL↔ NT
ST
S1
BIL
Red
J1(R)
White
J2(L)
J3
TP1(GND)
TP2(R OUT)Ⓑ
TP3(L OUT)Ⓐ
1 2 9
CN2
CN1
VS-126 BOARD
CN201
CN102
White
AUDIO L terminal
Red
AUDIO R terminal

600Ω : 270 (1-249-410-11) + 330 (1-249-411-11)

47 kΩ : 1-249-437-11

Ⓐ : 1.5 MHz deviation adjustment
Ⓑ : 1.7 MHz deviation adjustment

Fig. 6-3-56.

[Adjustment Procedure]

1) E-E output level check
2) 1.5 MHz deviation adjustment
3) 1.7 MHz deviation adjustment
4) BPF adjustment
5) Overall level characteristics, distortion check
6) Separation check

1. E-E Output Level Check

Mode	Record
Signal	400 Hz, -7.5 dBs, Audio input terminal (left) [right]
Measurement Point	(Headphone terminal left) [Headphone terminal right]
Measuring Instrument	Audio lever meter
Specified Value	-7.0 ± 2.0 dBs

Note 1: Connect the cabinet (R) (SD board).
Note 2: Set the VOLUME knob to the maximum position.

Checking method:

1) Check that the 400 Hz signal level satisfies the specified value.

2. 1.5 MHz Deviation Adjustment

Sets the spectrum of the L-ch (L+R/2 signal) level modulated during recording. If deviated, the crosstalk of the audio signal will occur and the audio level will drop during both playback and recording.

Mode	Recording
Signal	Input the AFM DEV jig output signal to the right and left audio input terminals
Measuring point	CH1: AFM DEV jig TP31 CH2: AFM DEV jig TP3
Measuring device	Oscilloscope ADD mode CH2 INV mode
Adjustment page	D
Adjustment address	8F
Specified value	The difference between CH1 signal and CH2 signal should be below 40 mV.

Connection

1) Connect CN2 of the AFM DEV jig to CN102 of the VS board.
2) Connect the audio output terminal (J1 and J2) of the AFM DEV jig to audio input/output terminal (R and L) of the unit.
3) Connect TP28 (DC), TP27 (GND) of the AFM DEV jig to the DC power supply (+7 Vdc to +9 Vdc).
4) Set the AFM DEV jig switches to the following positions.
   S1 ··············BIL position
   S2 ··············PAL position
   S3 ··············SIN position

Adjustment Method

1) Match the vertical ranges of CH1 and CH2 of the oscilloscope to each other.
2) Set the oscilloscope to the ADD mode and CH2 to the INV (inverse) mode.
3) Set data:01 to page:1, address:00.
4) Change the data of page:D, address:8F and minimize the audio signal level difference (A).
5) Press the PAUSE button of the adjusting remote commander.

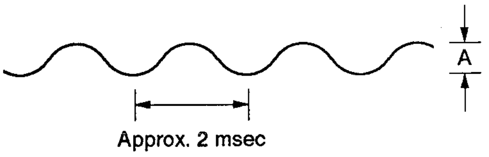


Fig. 6-3-57.

3. 1.7 MHz Deviation Adjustment

Sets the spectrum of the R-ch (L–R/2 signal) level modulated during recording. If deviated, the crosstalk of the audio signal will occur and the audio level will drop during both playback and recording.

Mode	Recording
Signal	Input the AFM DEV jig output signal to the right and left audio input terminals
Measuring point	CH1: AFM DEV jig TP32 CH2: AFM DEV jig TP2
Measuring device	Oscilloscope ADD mode CH2 INV mode
Adjustment page	D
Adjustment address	8E
Specified value	The difference between CH1 signal and CH2 signal should be below 40 mV.

Connection

1) Connect CN2 of the AFM DEV jig to CN102 of the VS board.
2) Connect the audio output terminal (J1 and J2) of the AFM DEV jig to audio input/output terminal (R and L) of the unit.
3) Connect TP28 (DC), TP27 (GND) of the AFM DEV jig to the DC power supply (+7 to +9 Vdc).
4) Set the AFM DEV adjustment tool switches to the following positions.

   S1 ·············BIL position
   S2 ·············PAL position
   S3 ·············INV position

Adjustment Method

1) Match the vertical ranges of CH1 and CH2 of the oscilloscope to each other.
2) Set the oscilloscope to the ADD mode and CH2 to the INV (inverse) mode.
3) Set data:01 to page:1, address:00.
4) Change the data of page:D, address:8E and minimize the audio signal level difference (A).
5) Press the PAUSE button of the adjusting remote commander.

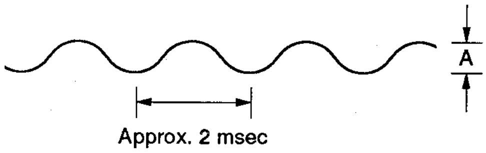


Fig. 6-3-58.

4. BPF Adjustment

Sets the BPF passing frequency so that the AFM signal can separate from the playback RF signal properly. If deviated. the mono/stereo mode will be differentiated incorrectly, and noises and distortions will increase during high volume playback.

Mode	Playback
Signal	Alignment tape: for BPF adjustment (WR5-11CS)
Measuring point	Right or left audio output terminal
Measuring device	Distortion meter
Adjustment page	D
Adjustment address	8D
Specified value	The right and left channel distortion rates should be almost the same (within ± 1%) and minimum

Adjustment Method

1) Set data:01 to page:1, address:00.
2) Set the Hi-Fi sound switch in the menu display to “ $\boxed{2}$ ”.
3) Change the data of page:D, address:8D and minimize the distortion rate.
4) Press the PAUSE button of the adjusting remote commander.
5) Set the Hi-Fi sound switch to “ $\boxed{1}$ ”.
6) Change the data of page:D, address:8D and minimize the distortion rate.
7) Press the PAUSE button of the adjusting remote commander.
8) Repeat steps 2) to 7) and set the data of address:8D so that the distortions rates when the Hi-Fi sound switch is set to “ $\boxed{2}$ ” and set to “ $\boxed{1}$ ” respectively are almost the same and minimum.
9) Press the PAUSE button of the adjusting remote commander.

5. Overall Level Characteristics, Distortion Check

Mode	Self recording/playback
Signal	400 Hz, –7.5 dBs: Audio input terminal (left) [right] No signal: Audio input terminal (right) [left]
Measurement Point	Audio output terminal (left) [right]
Measuring Instrument	Audio level meter and distortion meter
Specified Value	Level: –7.5 ± 2.5 dBs Distortion rate: Below 0.8% (Note 2)

Note: 1) The [ ] indicates the measuring point during the right channel check.
2) Value when the 200 kHz to 6 kHz band-path filter is used

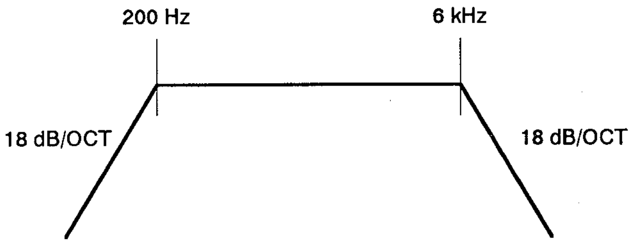


Fig. 6-3-59.

Checking method:

1) Input the 400 Hz, –7.5 dBs signal only to the audio input terminal (left) [right].
   Note: Be sure to insert the shorting plug to the terminal that was not signal input.
2) Record the signal.
3) Remove the input signal.
4) Playback the recorded section.
5) Check that the 400 Hz signal level of the audio output terminal (left) [right] is –7.5 ± 2.5 dBs, and that the distortion rate is below 0.8% (Note 2).

6. Separation Check

Mode	Self recording /playback
Signal	No signal: Audio input terminal (left) [right] 400 Hz, –7.5 dBs: Audio input terminal (right) [left]
Measurement Point	Audio output terminal (left) [right]
Measuring Instrument	Audio level meter (Use an IHF-A curve auditory correction filter)
Specified Value	Below –27.5 dBs

Note: The [ ] indicates the measuring point during the right channel check.

Checking method:

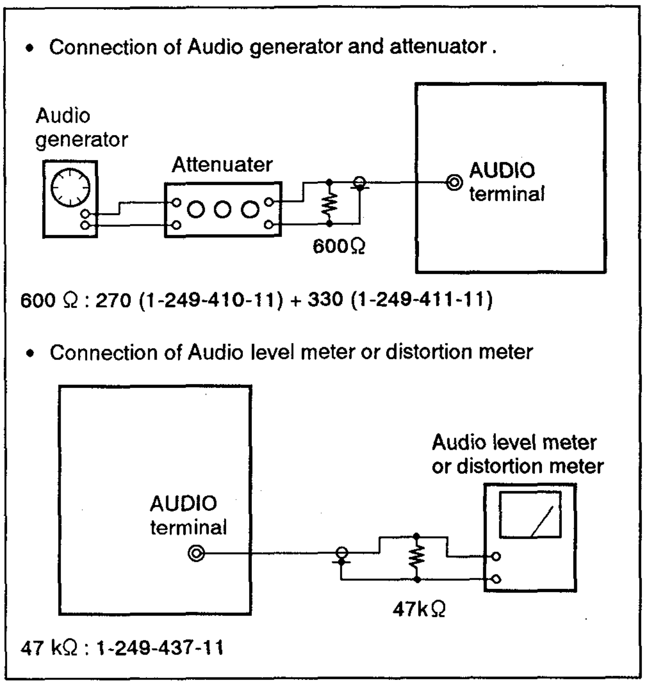
1) Insert a shorting plug into the audio input terminal (left) [right], and input a 400 Hz, –7.5 dBs signal only to the audio input terminal (right) [left].
2) Record the signal.
3) Remove the input signal.
4) Playback the recorded section.
5) Check that the cross talk level (400 Hz) of the audio output terminal (left) [right] is below –27.5 dBs.

3-9. MONAURAL AUDIO SYSTEM ADJUSTMENT (CCD-TRV30E/TRV40E, FV 836)

- Perform the adjustment using the color bar signal as a video signal input for VIDEO terminal

[Connecting the measuring instruments for the audio]

Connect the audio system measuring instruments besides the video system measuring instruments as shown in Fig. 6-3-60, and perform adjustments with the power switch [VTR or PLAYER] position.



- Connection of Audio generator and attenuator.

600 Ω : 270 (1-249-410-11) + 330 (1-249-411-11)

- Connection of Audio level meter or distortion meter

47 kΩ : 1-249-437-11

Fig. 6-3-60.

[Adjustment Procedure]

1) E-E output level check
2) Deviation adjustment
3) Overall level characteristics, distortion check
4) Overall noise level check

1. E-E Output Level Check

Mode	Record
Signal	400 Hz, –7.5 dBs, Audio input terminal
Measurement Point	Earphone terminal
Measuring Instrument	Audio level meter
Specified Value	–7.0 ± 2.0 dBs

Note 1: Connect the cabinet (R) (SD board).
Note 2: Set the VOLUME knob to the maximum position.

Checking method:

1) Check that the 400 Hz signal level satisfies the specified value.

2. Deviation Adjustment

Adjust to the optimum audio FM signal deviation.
If the adjustment is not correct, its playback level will differ from that of other units.

Mode	Playback
Signal	Alignment tape: For checking the operation (WR5-5CSP)
Measurement Point	Audio output terminal
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	8F
Specified Value	–7.5 ± 0.5 dBs

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: 8F, and adjust so that the 400 Hz signal level becomes the specified value.
3) Press the PAUSE button of the adjusting remote commander.

3. Overall Level Characteristic, Distortion Check

Mode	Self recording/playback
Signal	400 Hz, –7.5 dBs, Audio input terminal
Measurement Point	Audio output terminal
Measuring Instrument	Audio level meter and distortion meter
Specified Value	Level: –7.5 ± 2 dBs Distortion rate: Below 0.5% (Note 1)

Note: 1) Value when the following filter is used

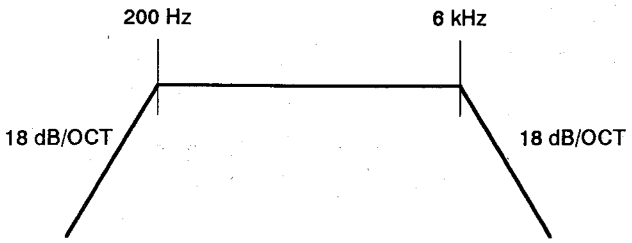


Fig. 6-3-61.

Checking method:

1) Input the 400 Hz, –7.5 dBs signal to the audio input terminal.
2) Record the signal.
3) Remove the input signal.
4) Playback the recorded section.
5) Check that the 400 Hz signal level of the audio output terminal is –7.5 ± 2 dBs, and that the distortion rate is below 0.5% (Note 1).

4. Overall Noise Level Check

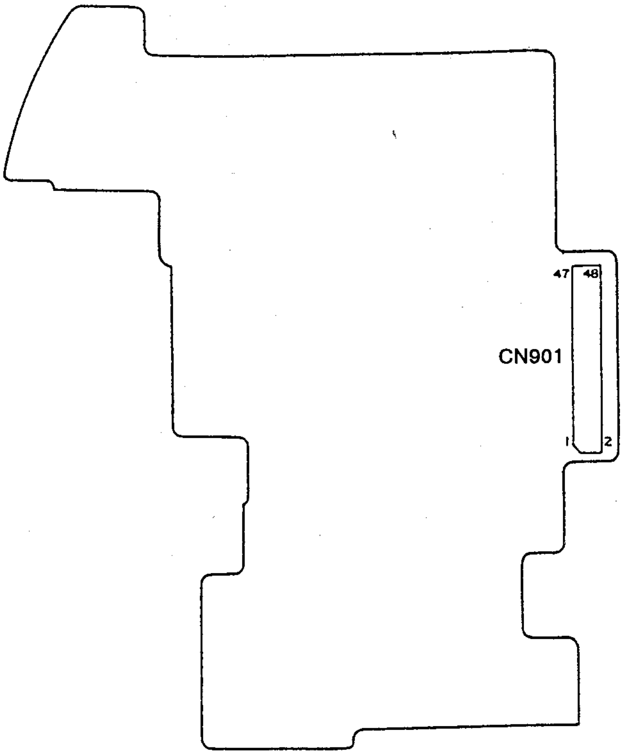
Mode	Self recording
Signal	No signal: Audio input terminal
Measurement Point	Audio output terminal
Measuring Instrument	Audio level meter (Use an IHF-A curve auditory correction filter)
Specified Value	Below –65.0 dBs

Checking method:

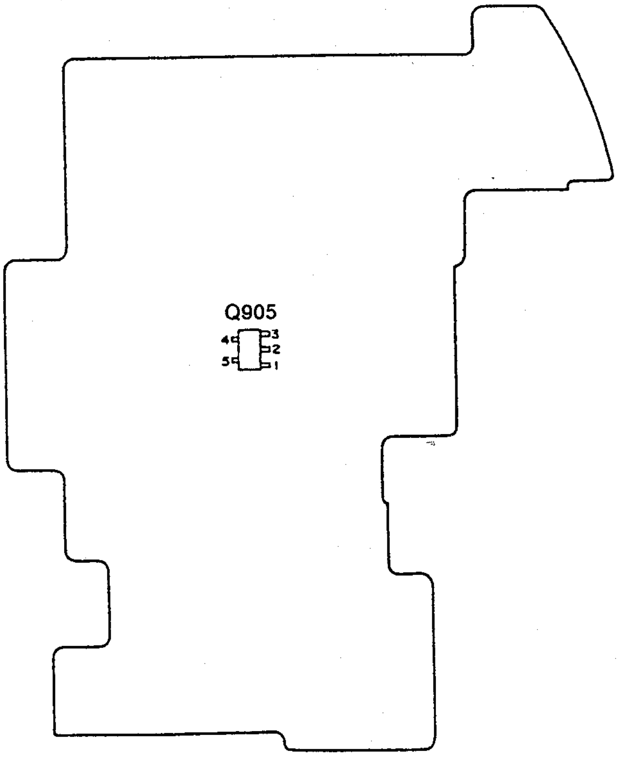
1) Insert the shorting plug to the audio input terminal.
2) Record.
3) Remove the shorting plug.
4) Playback the recorded section.
5) Check that the noise level of the audio output terminal is below –65.0 dBs.

3-10. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

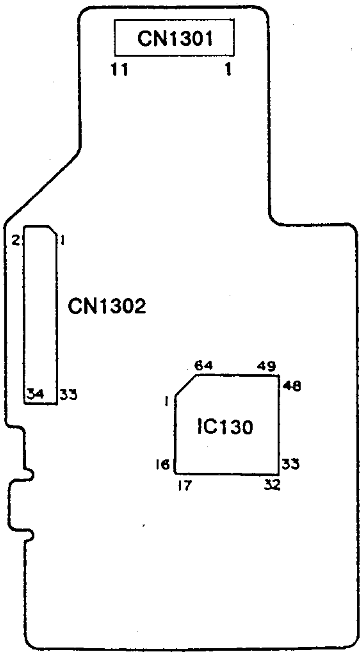
DD-79 BOARD (COMPONENT SIDE)


47
48
CN901
1
2

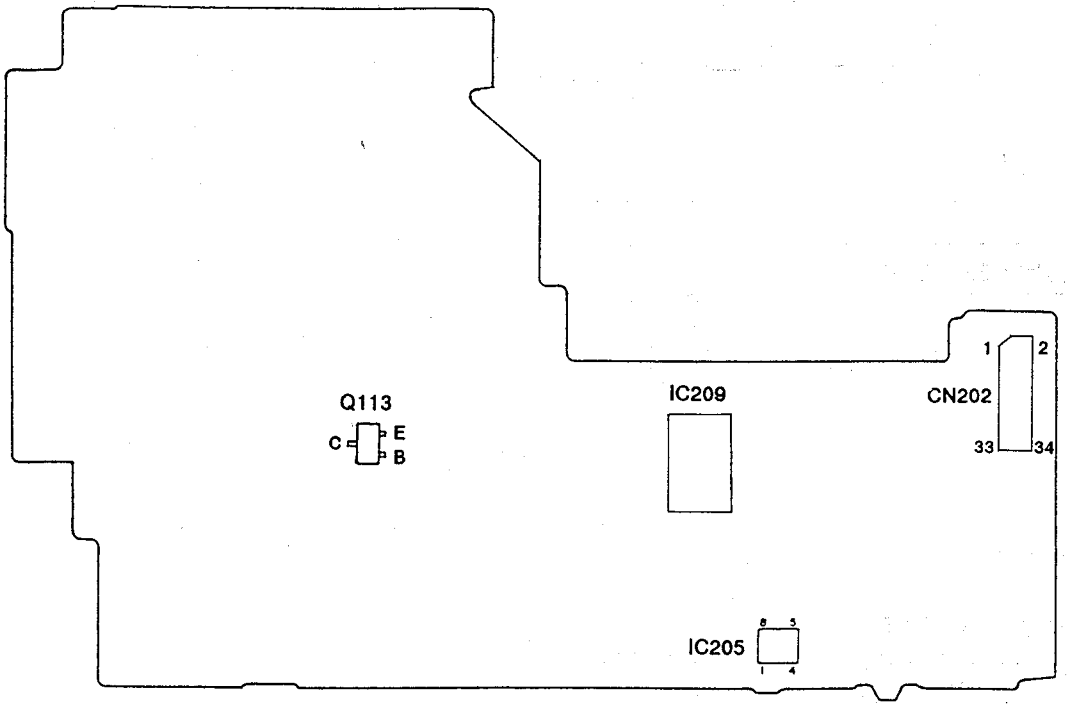
DD-79 BOARD (CONDUCTOR SIDE)



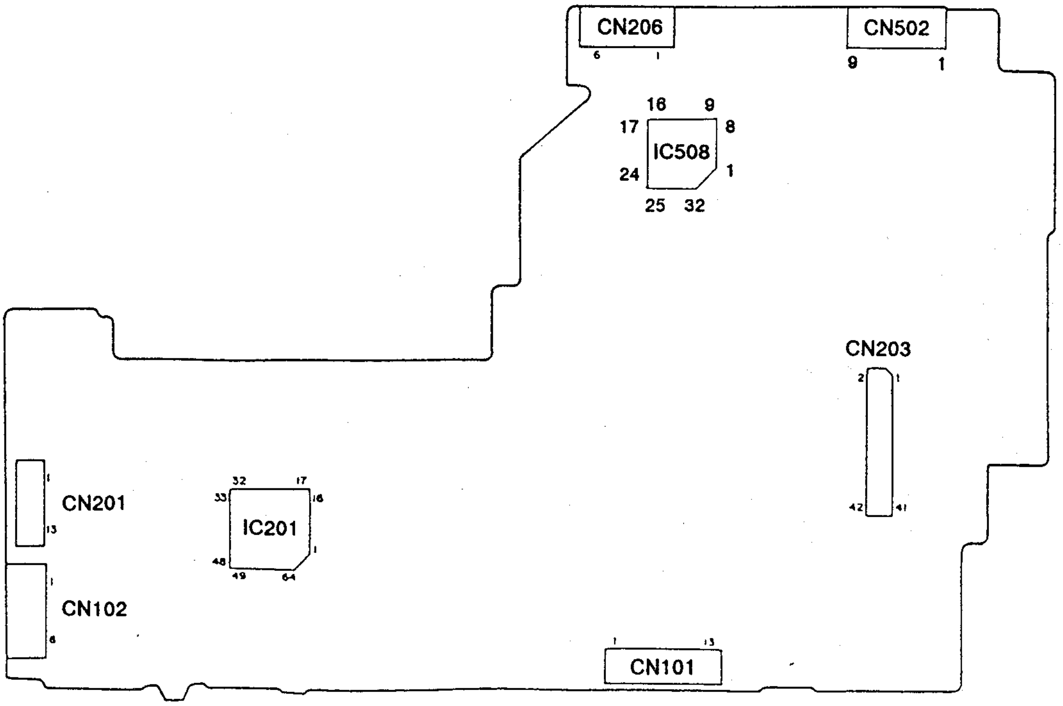
AU-185 BOARD (COMPONENT SIDE)


CN1301
11
1
2
1
CN1302
34
33
64
49
48
1
IC130
16
33
17
32

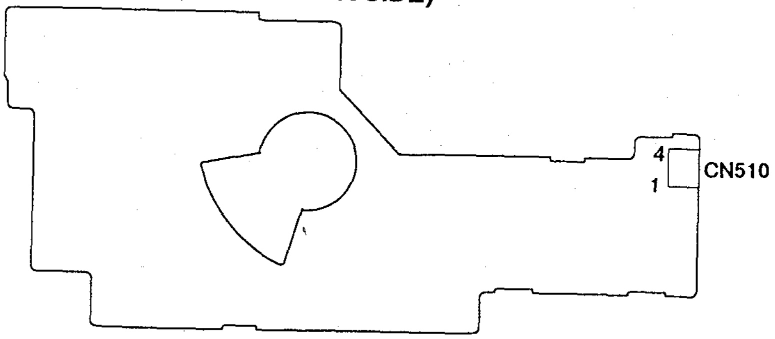
VS-126 BOARD (COMPONENT SIDE)


Q113
C
E
B
IC209
CN202
1
2
33
34
IC205
8
5
1
4

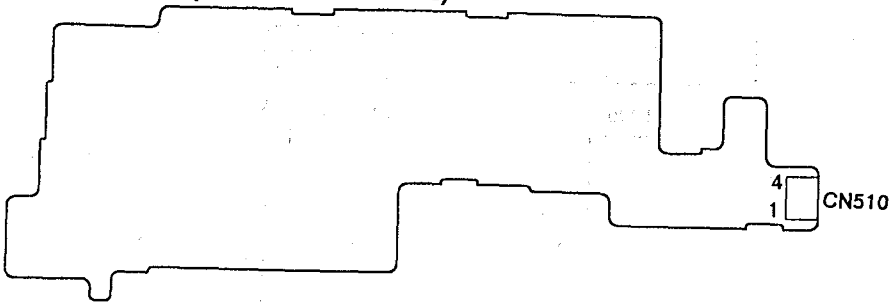
VS-126 BOARD (CONDUCTOR SIDE)


CN206
6
1
CN502
9
1
16
9
17
8
IC508
24
1
25
32
CN203
2
1
42
41
CN201
1
13
32
17
33
16
IC201
48
1
49
64
CN102
1
6
1
13
CN101

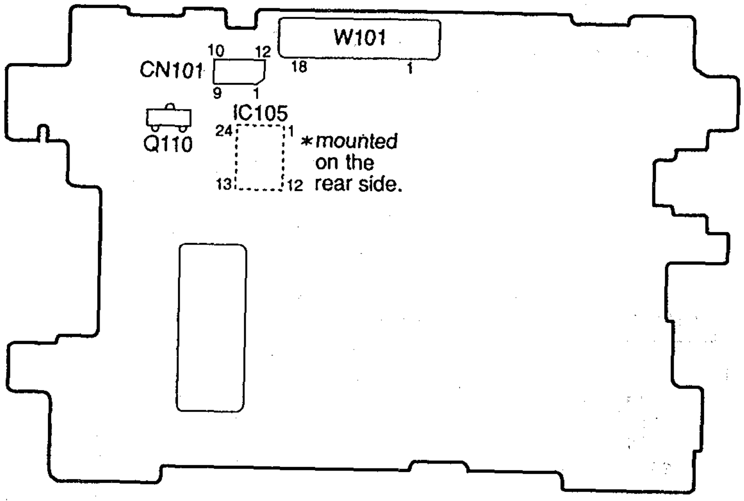
SD-18 BOARD (CONDUCTOR SIDE)



SD-19 BOARD (COMPONENT SIDE)

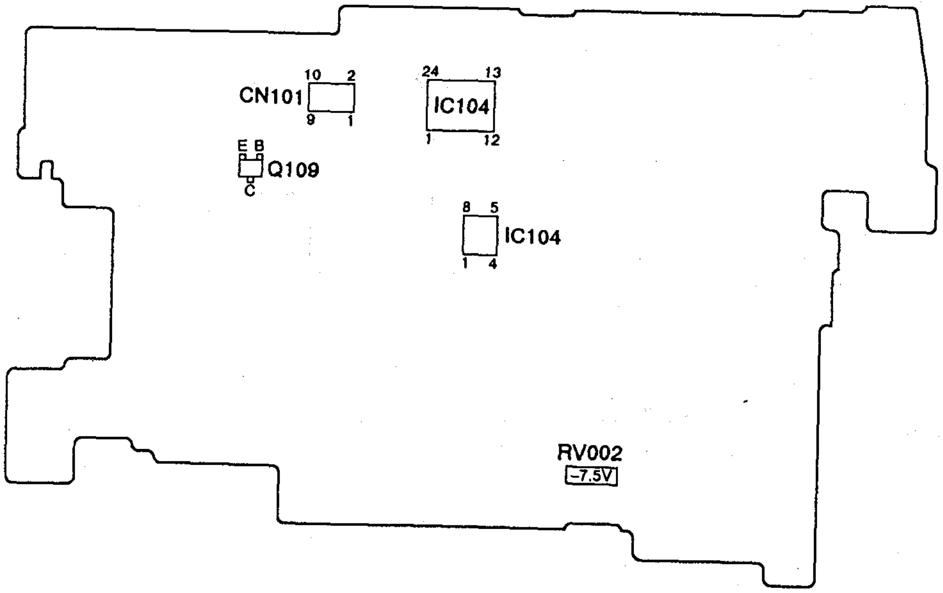


PD-60 BOARD (CONDUCTOR SIDE)


W101
18
1
CN101
10
12
9
1
Q110
IC105
24
1
13
12

∗mounted on the rear side.

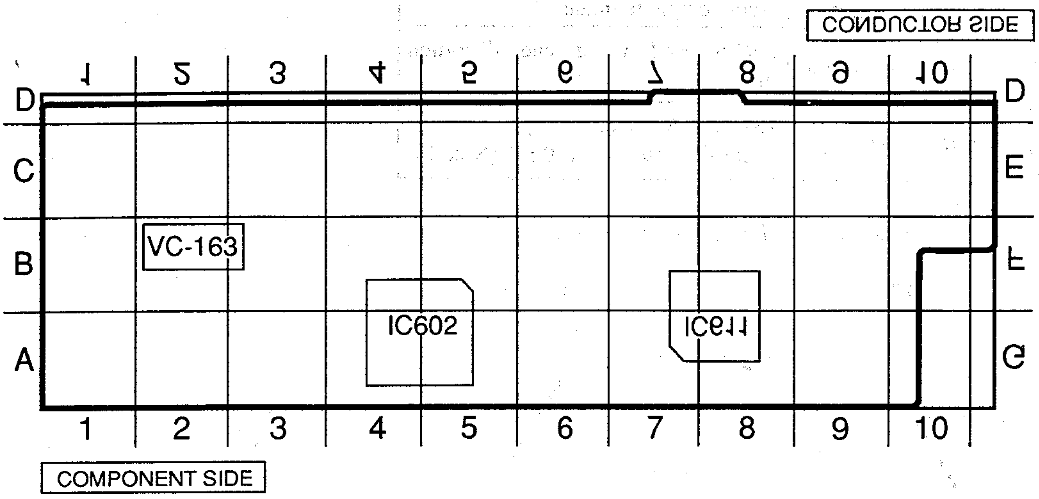
PD-62 BOARD (COMPONENT SIDE)

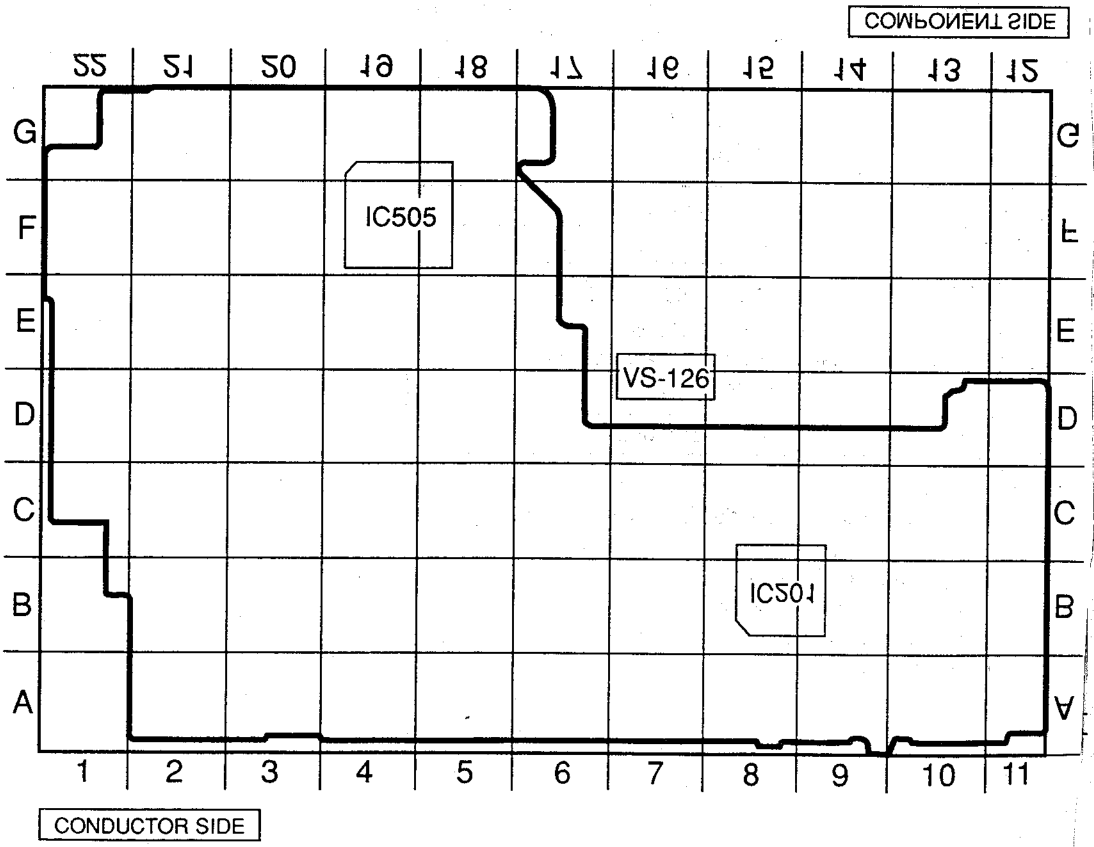

CN101
10
2
9
1
24
13
IC104
1
12
E B
Q109
C
8
5
IC104
1
4
RV002
-7.5V

<PARTS REFERENCE SHEET>

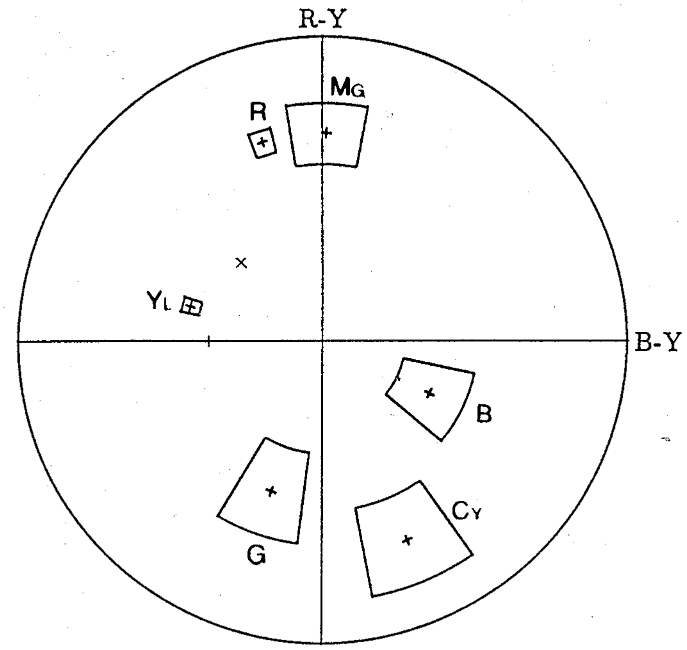
You can find the parts position of mount locations applying to boards of a set.

Take a copy CAMERA COLOR REPRODUCTION FRAME and PARTS REFERENCE SHEET with a clear sheet for use.


CONDUCTOR SIDE
D
C
B
A
D
E
F
G
VC-163
IC602
IC611
1
2
3
4
5
6
7
8
9
10
COMPONENT SIDE

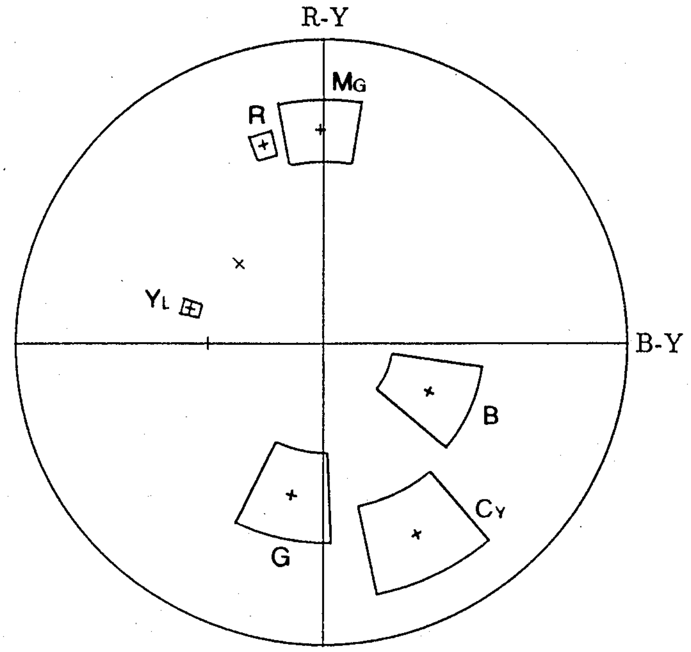

COMPONENT SIDE
22
21
20
19
18
17
16
15
14
13
12
G
F
E
D
C
B
A
IC505
VS-126
IC201
1
2
3
4
5
6
7
8
9
10
11
CONDUCTOR SIDE

FOR CAMERA COLOR REPRODUCTION ADJUSTMENT


R-Y
MG
R
YL
B-Y
B
CY
G

Take a copy CAMERA COLOR REPRODUCTION FRAME and Parts reference sheets with a clear sheet for use.

CCD (760) model


R-Y
MG
R
YL
B-Y
B
CY
G

CCD (510) model

CCD-TRV30E/TRV50E/TRV70E

(Included CCD-TRV40E/TRV60E) **RMT-708**

SONY

SERVICE MANUAL

AEP Model
UK Model
CCD-TRV30E/TRV40E/TRV60E/TRV70E
Australian Model
E Model
Hong Kong Model
CCD-TRV30E/TRV40E/TRV50E/TRV70E
Tourist Model
CCD-TRV30E/TRV50E

SUPPLEMENT-1

File this supplement with Service manual.

Subject: Printed Wiring Board is Change
Schematic Diagram is Change
Repair Parts List is Change
ADJUSTMENTS (3-7-8 V COM Adjustment)

< Note for complete replacement of new boards >

1. When VS-126 Board and SL-38 Board are replaced to the new board, each board should be replaced together. (No interchangeability of old and new due to the change of IC on SL-38 Board.)
2. When AU-185 Board and MA-237 Board are replaced to the new board, each board and Flexible flat cable FFC-199 10 Pin (1-775-961-11) should be replaced together. (The number of connector's pins will be different between old and new.)

- The suffix number of the parts of the following boards has been changed.
  Boards suffix number change and part number of complete board for repair change.
  Some parts of the schematic diagram have also been changed.

1. Part numbers of complete board for repair.

		Former	New
VC-163 Board	CCD-TRV30E/TRV40E	A-7066-440-A	A-7066-582-A
	CCD-TRV50E	A-7066-459-A	A-7066-673-A
	CCD-TRV60E	A-7066-569-A	A-7066-688-A
	CCD-TRV70E	A-7066-694-A	A-7066-681-A
VS-126 Board	CCD-TRV30E AEP, UK Model	A-7066-527-A	A-7085-058-A
	CCD-TRV30E Australian, E , Hong Kong Model	A-7066-438-A	A-7066-580-A
	CCD-TRV40E AEP, UK Model	A-7066-657-A	A-7066-676-A
	CCD-TRV40E Australian, E , Hong Kong Model	A-7066-578-A	A-7066-672-A
	CCD-TRV50E	A-7066-497-A	A-7066-691-A
	CCD-TRV60E	A-7066-570-A	A-7066-687-A
	CCD-TRV70E AEP, UK Model	A-7085-023-A	A-7066-679-A
	CCD-TRV70E Australian, E , Hong Kong Model	A-7066-457-A	A-7066-684-A
HE-20 Board	CCD-TRV60E/TRV70E	A-7066-461-A	A-7066-683-A
PJ-70 Board	CCD-TRV30E/TRV40E	A-7066-441-A	A-7066-583-A
	CCD-TRV50E/TRV60E/TRV70E	A-7066-460-A	A-7066-682-A
ZB-2 Board	ALL Model	A-7072-232-A	A-7072-368-A
SL-38 Board	ALL Model	A-7072-283-A	A-7072-394-A
AU-185 Board	CCD-TRV30E/TRV40E	A-7066-437-A	A-7066-579-A
	CCD-TRV50E/TRV60E/TRV70E	A-7066-456-A	A-7066-678-A
MA-237 Board	CCD-TRV30E/TRV40E	A-7072-233-A	A-7072-365-A
	CCD-TRV50E/TRV60E/TRV70E	A-7072-239-A	A-7056-685-A
MI-25 Board	CCD-TRV30E/TRV40E	A-7072-234-A	A-7072-366-A
	CCD-TRV50E/TRV60E/TRV70E	A-7072-240-A	A-7056-686-A
DD-79 Board	CCD-TRV30E/TRV40E	A-7066-439-A	A-7066-581-A
	CCD-TRV50E/TRV60E/TRV70E	A-7066-458-A	A-7066-680-A

2. Board suffix numbers change.

	Former	New
VC-163 Board	1-656-420-21	1-656-420-42
VS-126 Board	1-656-419-21	1-656-419-42
HE-20 Board	1-656-424-21	1-656-424-41
PJ-70 Board	1-656-425-21	1-656-425-41
ZB-2 Board	1-651-920-12	1-651-920-21
SL-38 Board	1-651-919-12	1-651-919-21
AU-185 Board	1-656-421-21	1-656-421-42
MA-237 Board	1-656-423-21	1-656-423-41
MI-25 Board	1-656-422-21	1-656-422-41
DD-79 Board	1-656-427-21	1-656-427-42

- The printed wiring board and schematic diagrams for ZB-2 Board are not shown due to no change of them.
- When VS-126 Board and SL-38 Board are replaced to the new board, each board should be replaced together.
- When AU-185 Board and MA-237 Board are replaced to the new board, each board should be replaced together.
- When AU-185 Board and MA-237 Board are replaced to the new board, it should be replaced with Flexible flat cable FFC-199 10 Pin (1-775-961-11) together.

Table for difference of functions

Model	**TRV30E**		**TRV40E**	**TRV50E**	**TRV60E**	**TRV70E**		
Destination	**AEP/UK**	**E/AUS/ HK/JE**	**E/AUS/HK**	**E/HK**	**AEP/UK**	**AEP/UK**	**AUS**	**E/HK**
LCD	3"	3"	3"	4"	3"	4"	4"	4"
Steady Shot	–	–	○	○	–	○	○	○
Audio	MONO	MONO	MONO	STEREO	STEREO	STEREO	STEREO	STEREO
Line In	○*	○	○	○	–	○*	○	○
Manual Focus	–	–	–	○	–	○	○	○
Zoom	12×	12×	48×	48×	24×	24×	48×	48×
Hi 8	–	–	–	–	○	○	○	○
Wide Mode	–	–	○	○	○	○	○	–
CCD Imager	510	510	760	760	760	760	760	760

- abbreviation

AUS : Australian model
HK : Hong Kong model
JE : Tourist model

* : Monitor input only

[Zoom lens]

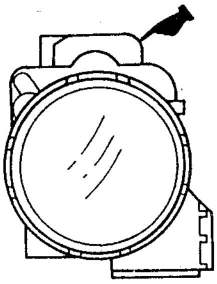
This unit employs three types of lens.
Note that the lenses are interchangeable, however their components are not.

Differentiating the lens

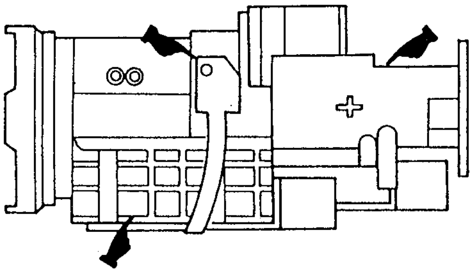
☛ : difference point

TYPE I (LSV-140A)

From the front of the lens

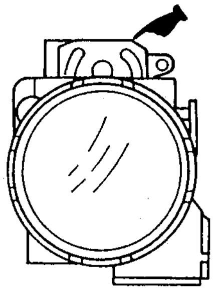


From the right side of the lens (as seen from the front)

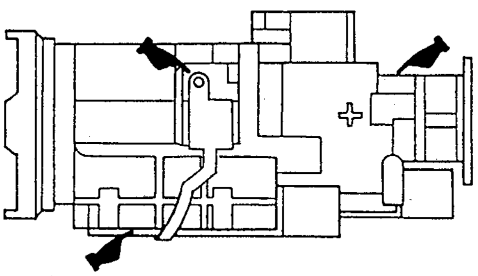


TYPE II (VCL-5412WA)

From the front of the lens

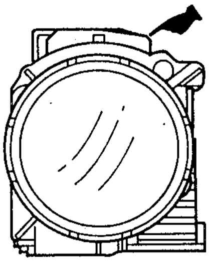


From the right side of the lens (as seen from the front)

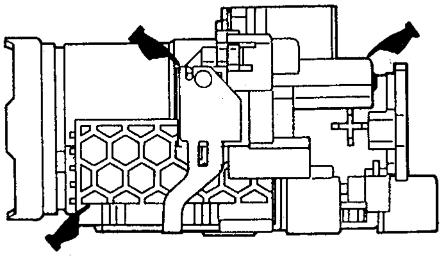


TYPE III (VCL-5412WB)

From the front of the lens



From the right side of the lens (as seen from the front)



☛ ADDITION (Added lens for this time)

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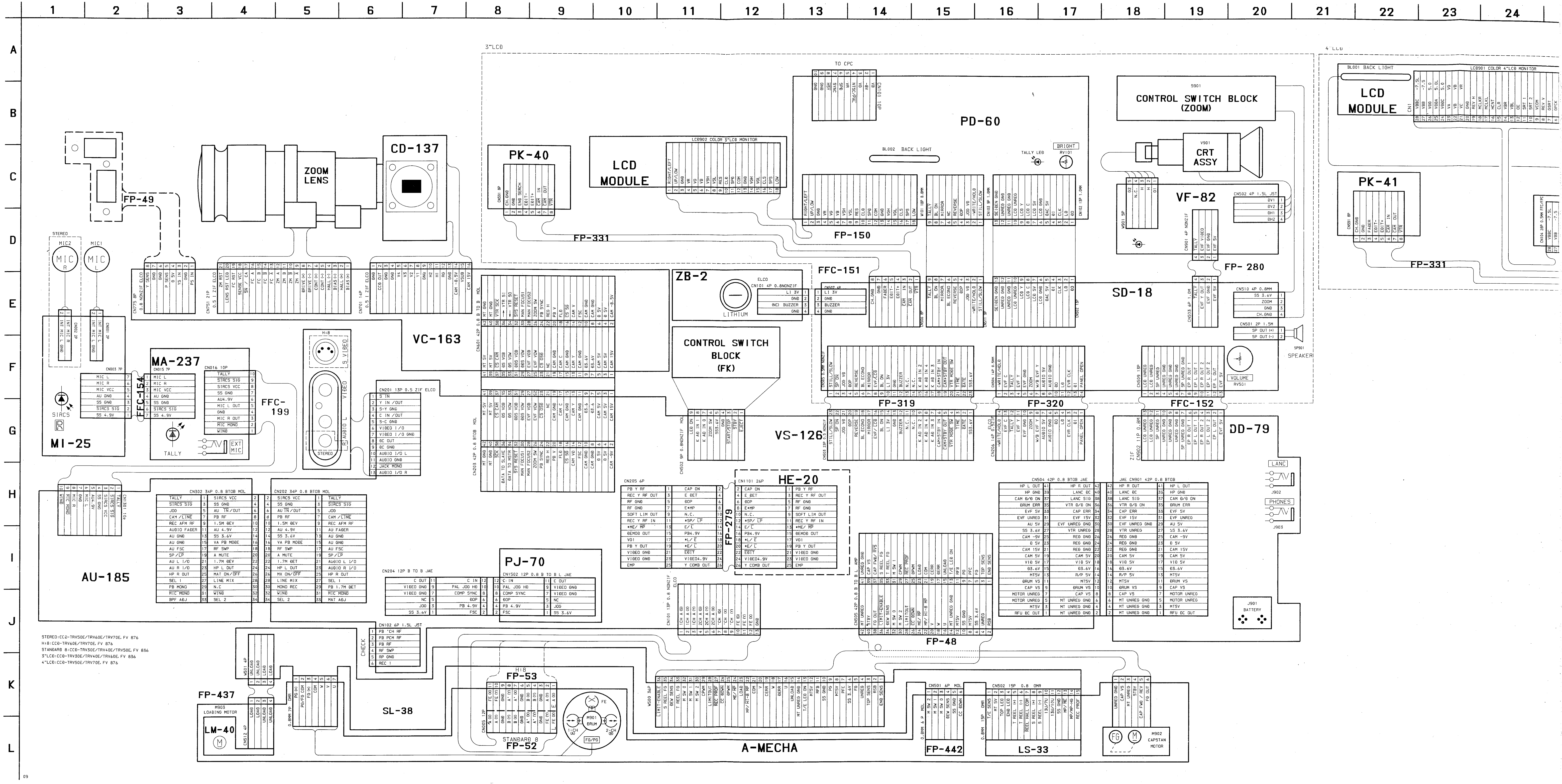
6-3. VIDEO SECTION ADJUSTMENTS ···· 6-1
3-7. LCD System Adjustments ···· 6-1
 8. V COM Adjustment ···· 6-1

SECTION 4

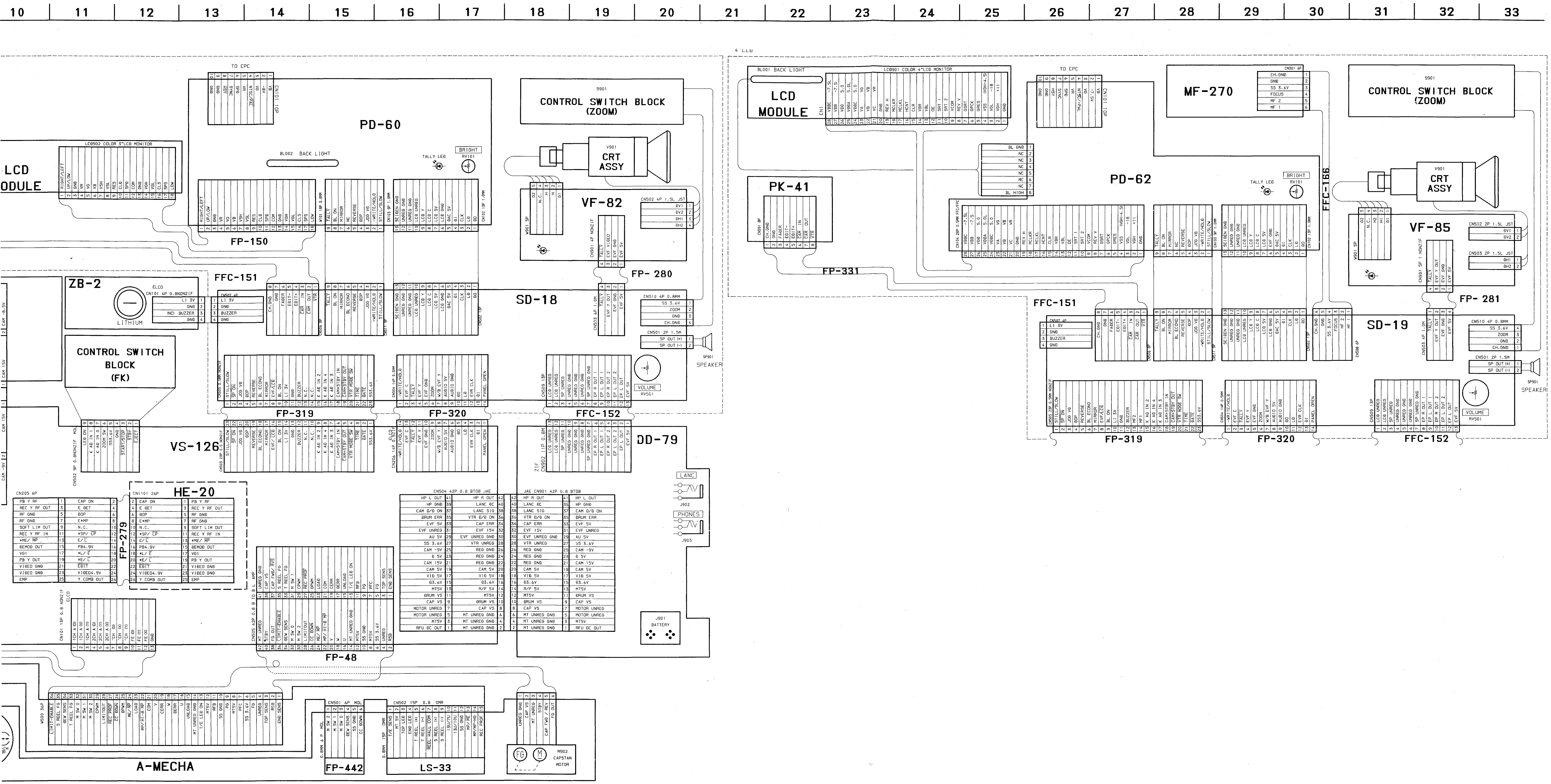
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



MI-25
MA-237
FFC-154
FFC-199
FP-49
ZOOM LENS
CD-137
PK-40
LCD MODULE
FP-331
VC-163
AU-185
PJ-70
ZB-2
LITHIUM
CONTROL SWITCH BLOCK (FK)
FP-279
HE-20
VS-126
PD-60
FP-150
FFC-151
FP-319
FP-320
FFC-152
SD-18
CONTROL SWITCH BLOCK (ZOOM)
CRT ASSY
VF-82
FP-280
DD-79
LCD MODULE
PK-41
FP-331
FP-48
FP-437
LM-40
SL-38
FP-53
FP-52
A-MECHA
FP-442
LS-33
CAPSTAN MOTOR

STEREO:CCD-TRV50E/TRV60E/TRV70E, FV 876
Hi8:CCD-TRV60E/TRV70E, FV 876
STANDARD 8:CCD-TRV30E/TRV40E/TRV50E, FV 836
3"LCD:CCD-TRV30E/TRV40E/TRV60E, FV 836
4"LCD:CCD-TRV50E/TRV70E, FV 876


10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33
LCD MODULE
PD-60
CONTROL SWITCH BLOCK (ZOOM)
CRT ASSY
VF-82
FP-150
FP-280
ZB-2
LITHIUM
FFC-151
SD-18
CONTROL SWITCH BLOCK (FK)
VS-126
FP-319
FP-320
FFC-152
DD-79
SPEAKER
VOLUME
LANC
PHONES
BATTERY
HE-20
FP-279
FP-48
A-MECHA
FP-442
LS-33
CAPSTAN MOTOR
LCD MODULE
PK-41
FP-331
PD-62
MF-270
CONTROL SWITCH BLOCK (ZOOM)
CRT ASSY
FFC-166
VF-85
FP-281
FFC-151
SD-19
FP-319
FP-320
FFC-152
SPEAKER

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.

(In addition to this , the necessary note is printed in each block.)

• For printed wiring boards.

- ▨ : Pattern from the side which enables seeing. (The other layers'patterns are not indicated.)
- Circled numbers refer to waveforms.
- (B) or (F), etc. of capacitors indicate the temperature characteristics.
- ○: Through hole is omitted.

* Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side)	Parts on the parts face side seen from the parts face are indicated.

• For schematic diagrams.

- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W unless otherwise noted. Chip resistor are 1/10W unless otherwise noted. kΩ : 1000Ω , MΩ : 1000kΩ .
- All capacitors are in μF unless otherwise noted. pF: μμF. 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : panel designation.
- △ : internal component.
- ▭ : adjustment for repeair.
- —— : B+ Line.
- - - - : B– Line.
- ⇨ : IN/OUT direction of (+, –) B LINE.
- Circled numbers refer to waveforms.

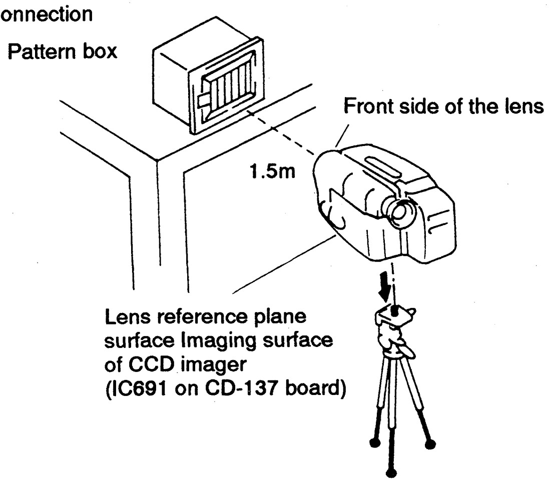
Note:
The components identi- fied by mark ⚠ or dotted line with mark ⚠ are critical for safty.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

• Measuring conditions voltage value and waveform. (CAMERA REC mode)

- The object is color bar chart of pattern box.
- Voltages are dc between ground and measurement points. Readings are taken with a digital multimeter (DC 10MΩ).
- Voltage variations may be noted due to normal production tolerances.

1. Connection


Pattern box
Front side of the lens
1.5m
Lens reference plane surface Imaging surface of CCD imager (IC691 on CD-137 board)

2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

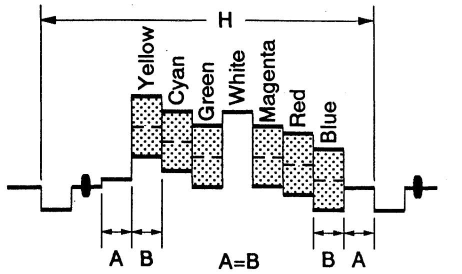

H
Yellow
Cyan
Green
White
Magenta
Red
Blue
A B
A=B
B A

Fig. a (Video output terminal output waveform)

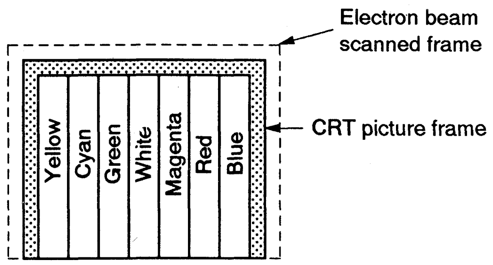

Electron beam scanned frame
CRT picture frame
Yellow
Cyan
Green
White
Magenta
Red
Blue

Fig. b (Picture on monitor TV)

(REC/PB mode)

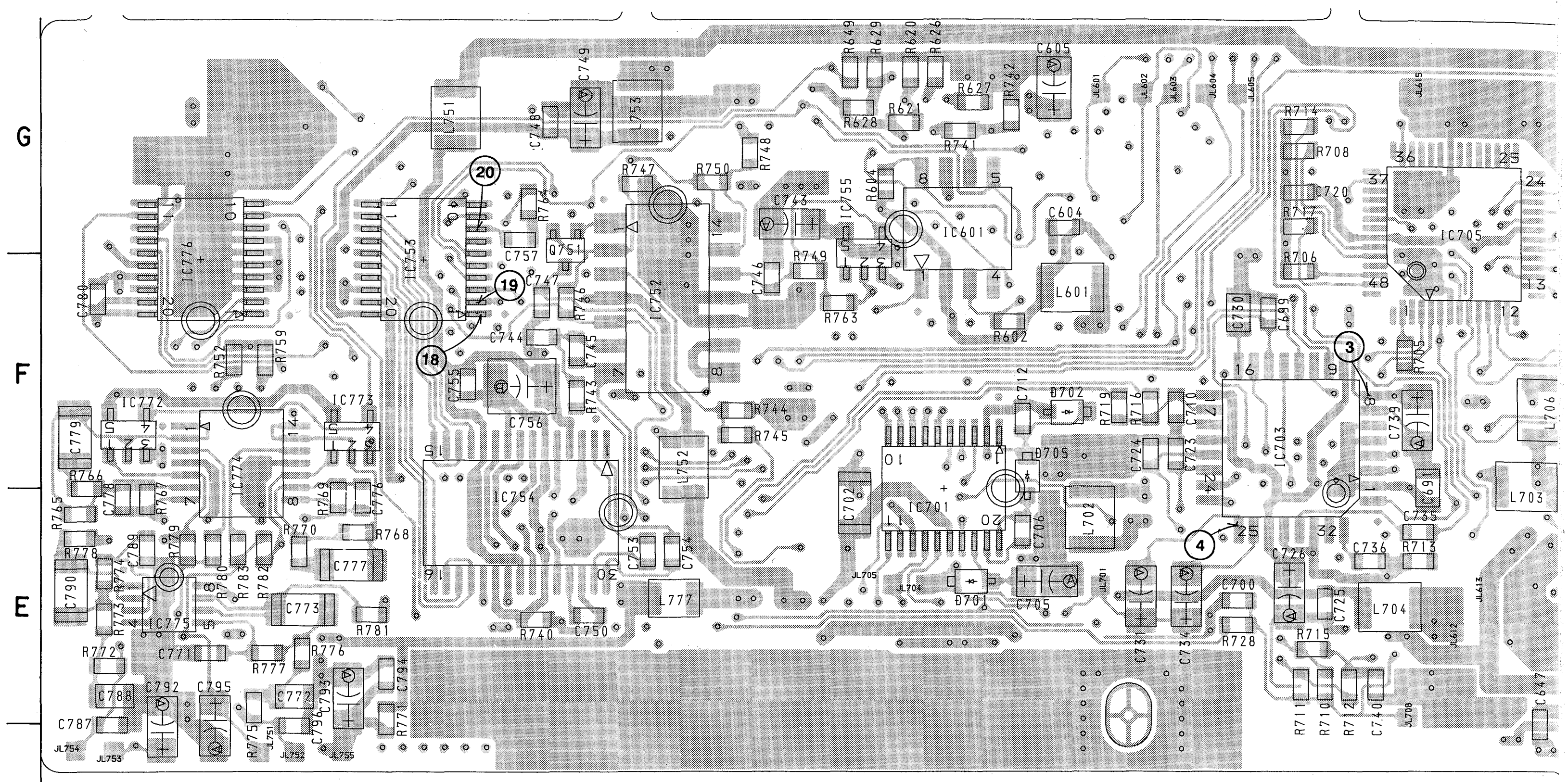
- Voltages are dc between ground and measurement points.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.

Note: Refer "3-1-3. Connecting the equipments" and "3-1-4. How to set the REC Mode" in VIDEO SECTION ADJUSTMENT. (See page 6–32)

There are f
printed on t

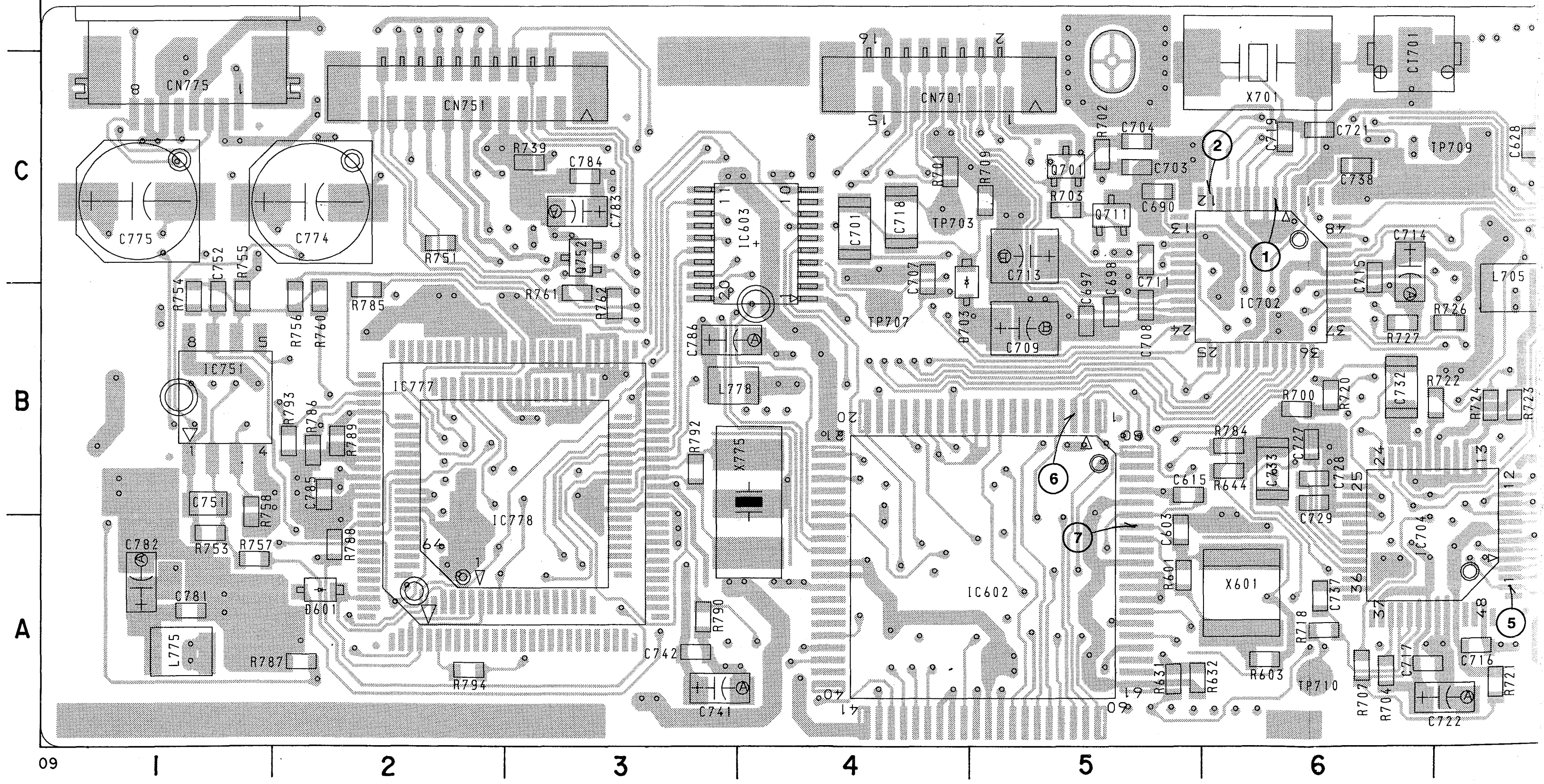
VC-163 (CAMERA, LENS DRIVE, STEADY SHOT CONTROL) PRINTED WIRING BOARD

VC-163 BOARD (CONDUCTOR SIDE)


G
F
E
IC776
IC753
IC752
IC601
IC772
IC773
IC774
IC754
IC701
IC703
IC705
L601
L702
L703
L704
L751
L752
L753
L777

D

VC-163 BOARD (COMPONENT SIDE)


C
B
A
09
1
2
3
4
5
6
CN775
CN751
CN701
X701
IC603
IC702
IC751
IC777
IC778
IC602
X601
C775
C774
TP703
TP707
TP709
TP710

waveform.

nt points.
10MΩ).
al production

f the lens

of Fig. a and

rm)

am
me

me

nt points.

0MΩ).
al production

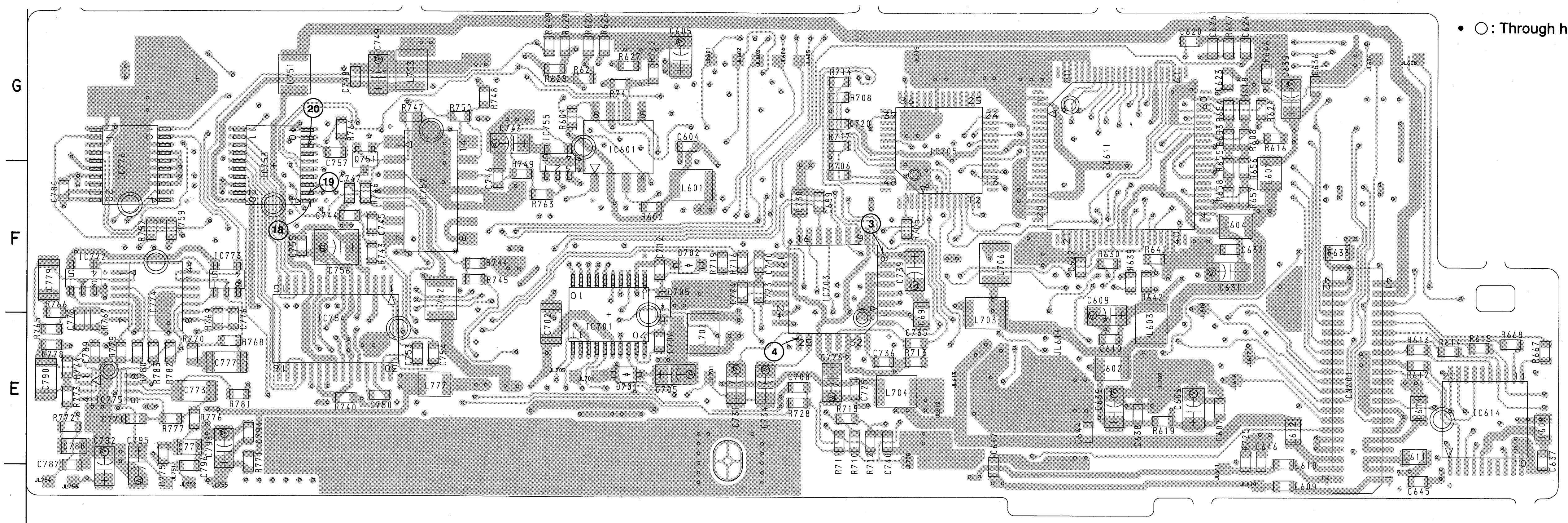
d "3-1-4. How
DJUSTMENT.

VC-163 (CAMERA, LENS DRIVE, STEADY SHOT CONTROL) PRINTED WIRING BOARD

There are few cases that the part isn't mounted in this model is printed on this diagram.

- **For printed wiring boards.**
- ○ : Through hole is omitted.

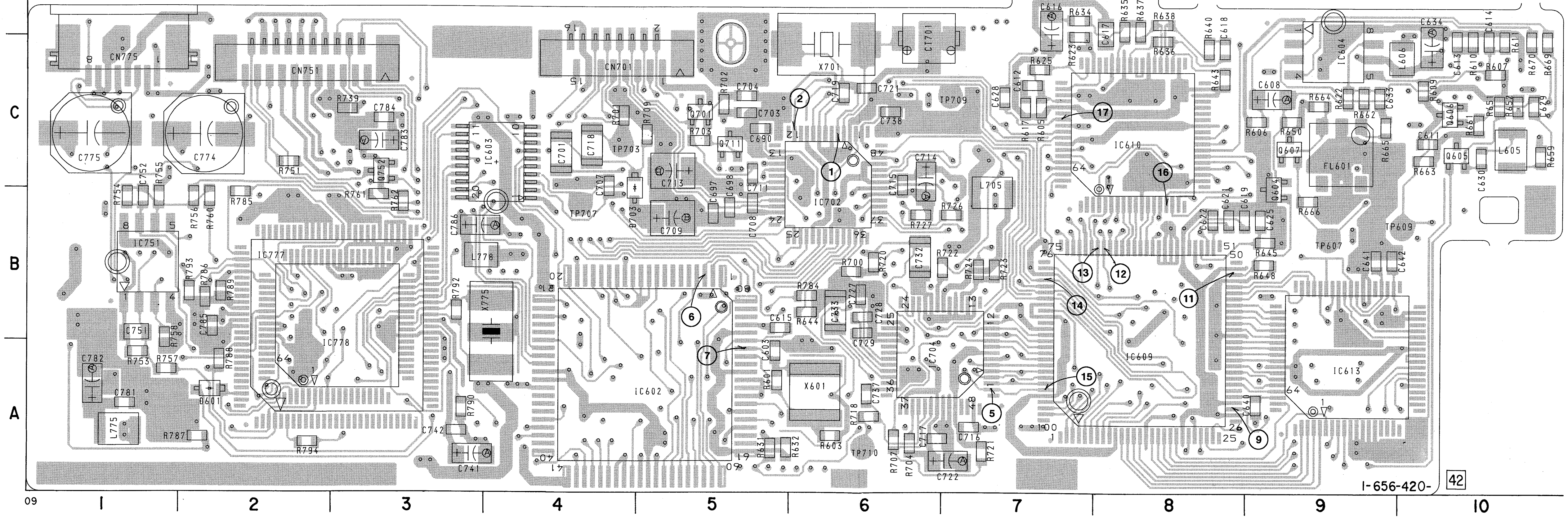
VC-163 BOARD (CONDUCTOR SIDE)



G
F
E
IC774
IC753
IC752
IC601
IC705
IC611
IC772
IC773
IC754
IC701
IC703
CN601
IC614

D

VC-163 BOARD (COMPONENT SIDE)

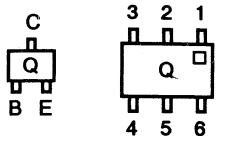


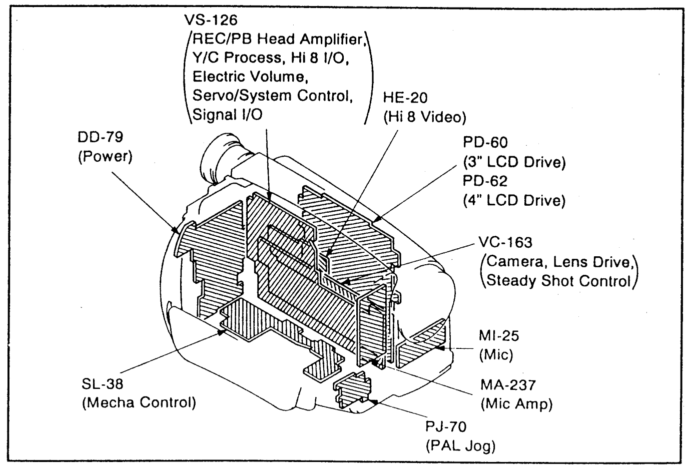
C
B
A
CN775
CN751
CN701
X701
IC603
IC702
IC610
IC604
FL601
IC751
IC777
IC778
IC602
X601
IC706
IC609
IC613
I-656-420-
42
1
2
3
4
5
6
7
8
9
10

VC-163 BOARD

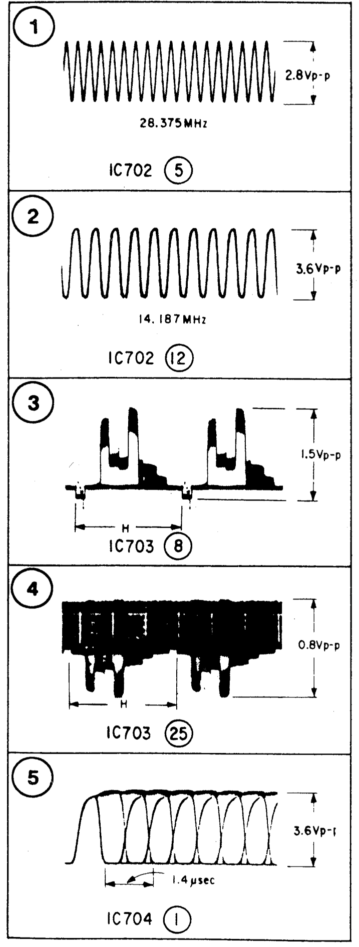
C604	G-5
C605	G-5
C606	E-8
C609	F-8
C610	E-8
C612	C-7
C616	D-7
C617	D-8
C618	C-8
C619	B-9
C620	G-8
C621	B-8
C622	B-8
C623	G-8
C624	G-9
C628	C-7
C629	C-10
C630	C-10
C632	F-8
C633	C-9
C634	C-10
C635	G-9
C636	G-9
C637	E-10
C638	E-8
C641	B-9
C642	B-10
C644	E-7
C645	D-10
C646	E-9
C647	E-7
C691	F-6
C697	B-5
C698	B-5
C699	F-6
C701	C-4
C702	E-4
C703	C-5
C704	C-5
C705	E-5
C706	E-5
C708	B-5
C709	B-5
C710	F-5
C711	C-5
C712	F-5
C713	C-5
C715	C-6
C716	A-7
C717	A-6
C718	C-4
C719	C-6
C720	G-6
C721	C-6
C722	A-6
C724	F-5
C725	E-6
C726	E-6
C727	B-6
C728	B-6
C729	B-6
C730	F-6
C731	E-5
C732	B-6
C733	B-6
C734	E-5
C735	E-6
C742	A-3
C743	G-4
C744	F-3
C745	F-3
C746	F-4
C747	F-3
C750	E-3
C751	B-1
C752	B-1
C753	E-3
C754	E-3
C755	F-2
C756	F-3
C757	G-3
C771	E-1
C772	E-2
C773	E-2
C774	C-2
C775	C-1
C776	E-2
C777	E-2
C778	E-1
C779	F-1
C780	F-1
C781	A-1
C782	A-1
C783	C-3
C784	C-3
C785	B-2
C786	B-3
C788	E-1
C789	E-1
C790	E-1
C793	E-2
C794	E-2
CN601	E-9
CN701	C-4
CN751	C-2
CN775	C-1
CT701	C-6
D601	A-2
D701	E-4
D702	F-5
D703	B-4
D705	F-5
FL601	C-9
IC601	G-4
IC602	A-5
IC603	C-4
IC609	A-8
IC610	C-8
IC611	G-8
IC613	A-9
IC614	E-10
IC701	E-4
IC702	B-6
IC703	F-6
IC704	A-6
IC705	G-7
IC751	B-1
IC752	F-3
IC753	F-2
IC754	E-2
IC755	G-4
IC772	F-1
IC773	F-2
IC774	F-1
IC775	E-1
IC776	F-1
IC778	A-2
L601	F-5
L602	E-8
L603	E-8
L604	F-8
L605	C-10
L606	C-10
L607	F-9
L608	E-10
L609	D-9
L610	E-9
L611	E-10
L612	E-9
L614	E-10
L702	E-5
L703	F-7
L704	E-6
L705	B-7
L706	F-7
L751	G-2
L752	F-3
L753	G-3
L775	A-1
L777	E-3
L778	B-3
Q604	B-9
Q605	C-10
Q606	C-10
Q607	C-9
Q701	C-5
Q711	C-5
Q751	G-3
Q752	C-3
R601	A-5
R602	F-5
R603	A-6
R604	G-4
R608	G-9
R612	E-10
R613	E-10
R614	E-10
R615	E-10
R617	C-7
R619	E-8
R620	G-4
R621	G-4
R622	C-9
R623	C-7
R624	G-9
R625	C-7
R626	G-4
R627	G-4
R628	G-4
R629	G-4
R630	F-8
R631	A-5
R634	D-7
R635	D-8
R636	C-8
R637	D-8
R638	D-8
R639	F-8
R640	C-8
R641	F-8
R643	C-8
R644	B-6
R645	B-9
R646	G-9
R647	G-8
R648	B-9
R649	G-4
R650	C-9
R651	C-10
R652	C-10
R653	G-8
R654	G-8
R656	F-9
R657	F-9
R658	F-8
R659	C-10
R661	C-10
R662	C-9
R663	C-10
R664	C-9
R665	C-9
R666	B-9
R667	E-10
R668	E-10
R701	C-4
R702	C-5
R703	C-5
R705	F-6
R708	G-6
R709	C-5
R710	E-6
R711	E-6
R712	E-6
R713	E-6
R714	G-6
R715	E-6
R716	F-5
R717	G-6
R718	A-6
R719	F-5
R721	A-7
R722	B-7
R723	B-7
R725	E-9
R726	B-7
R727	B-6
R728	E-6
R740	E-3
R741	G-4
R742	G-5
R743	F-3
R744	F-3
R745	F-3
R746	F-3
R747	G-3
R748	G-4
R749	F-4
R750	G-3
R751	C-2
R752	F-1
R753	A-1
R754	B-1
R755	B-1
R756	B-2
R757	A-1
R758	B-1
R759	F-1
R760	B-2
R761	B-3
R762	B-3
R764	G-3
R765	E-1
R766	F-1
R767	E-1
R768	E-2
R769	E-2
R770	E-2
R771	E-2
R772	E-1
R773	E-1
R774	E-1
R775	E-1
R776	E-2
R777	E-1
R778	E-1
R779	E-1
R780	E-1
R781	E-2
R782	E-1
R783	E-1
R784	B-6
R786	B-2
R787	A-2
R788	A-2
R789	B-2
R790	A-3
R792	B-3
R793	B-2
X601	A-6
X701	C-6
X775	B-4

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor


C
Q
B E
3 2 1
Q
4 5 6

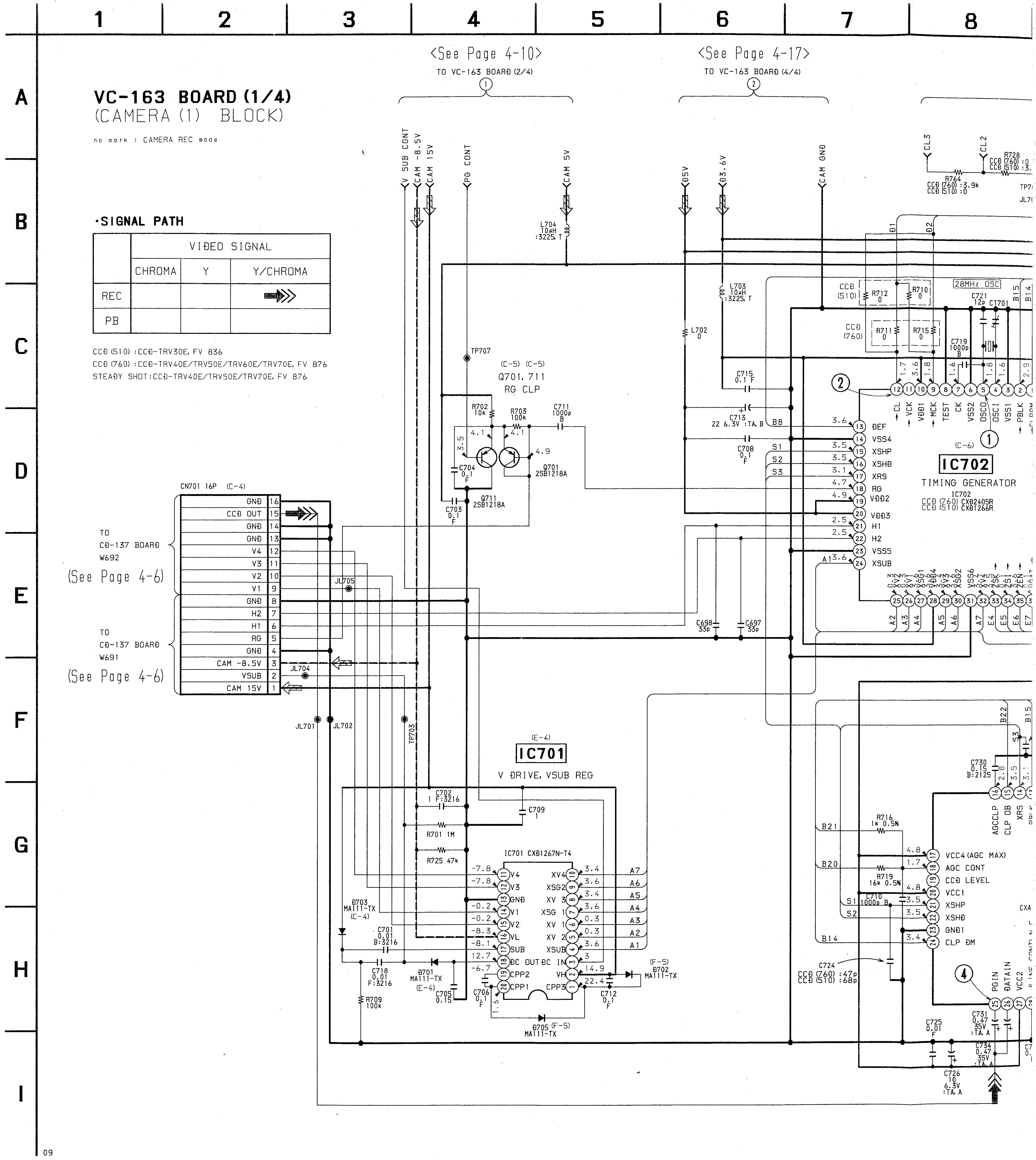

VS-126
(REC/PB Head Amplifier, Y/C Process, Hi 8 I/O, Electric Volume, Servo/System Control, Signal I/O)
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive, Steady Shot Control)
MI-25
(Mic)
SL-38
(Mecha Control)
MA-237
(Mic Amp)
PJ-70
(PAL Jog)

VC-163 BOARD(1/4)



< >: The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.
( ): The pages above correspond to SERVICE MANUAL (Original).

VC-163 (CAMERA 1) SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
VC-163 BOARD (1/4)
(CAMERA (1) BLOCK)
no mark : CAMERA REC mode
・SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
REC
PB
CCD (510) :CCD-TRV30E, FV 836
CCD (760) :CCD-TRV40E/TRV50E/TRV60E/TRV70E, FV 876
STEADY SHOT:CCD-TRV40E/TRV50E/TRV70E, FV 876
<See Page 4-10>
TO VC-163 BOARD (2/4)
<See Page 4-17>
TO VC-163 BOARD (4/4)
V SUB CONT
CAM -8.5V
CAM 15V
PG CONT
CAM 5V
CAM GND
Q701, 711
RG CLP
Q701
2SB1218A
Q711
2SB1218A
CN701 16P (C-4)
GND
CCD OUT
V4
V3
V2
V1
H2
H1
RG
CAM -8.5V
VSUB
CAM 15V
TO
CD-137 BOARD
W692
(See Page 4-6)
TO
CD-137 BOARD
W691
(See Page 4-6)
IC701
V DRIVE, VSUB REG
IC701 CXD1267N-T4
IC702
TIMING GENERATOR
IC702
CCD (760) CXD2405R
CCD (510) CXD1266R
28MHz OSC
DEF
VSS4
XSHP
XSHD
XRS
RG
VDD2
VDD3
H1
H2
VSS5
XSUB
VCC4 (AGC MAX)
AGC CONT
CCD LEVEL
VCC1
XSHP
XSHD
GND1
CLP DM
PGIN
DATAIN
VCC2
09

tterns

ve)

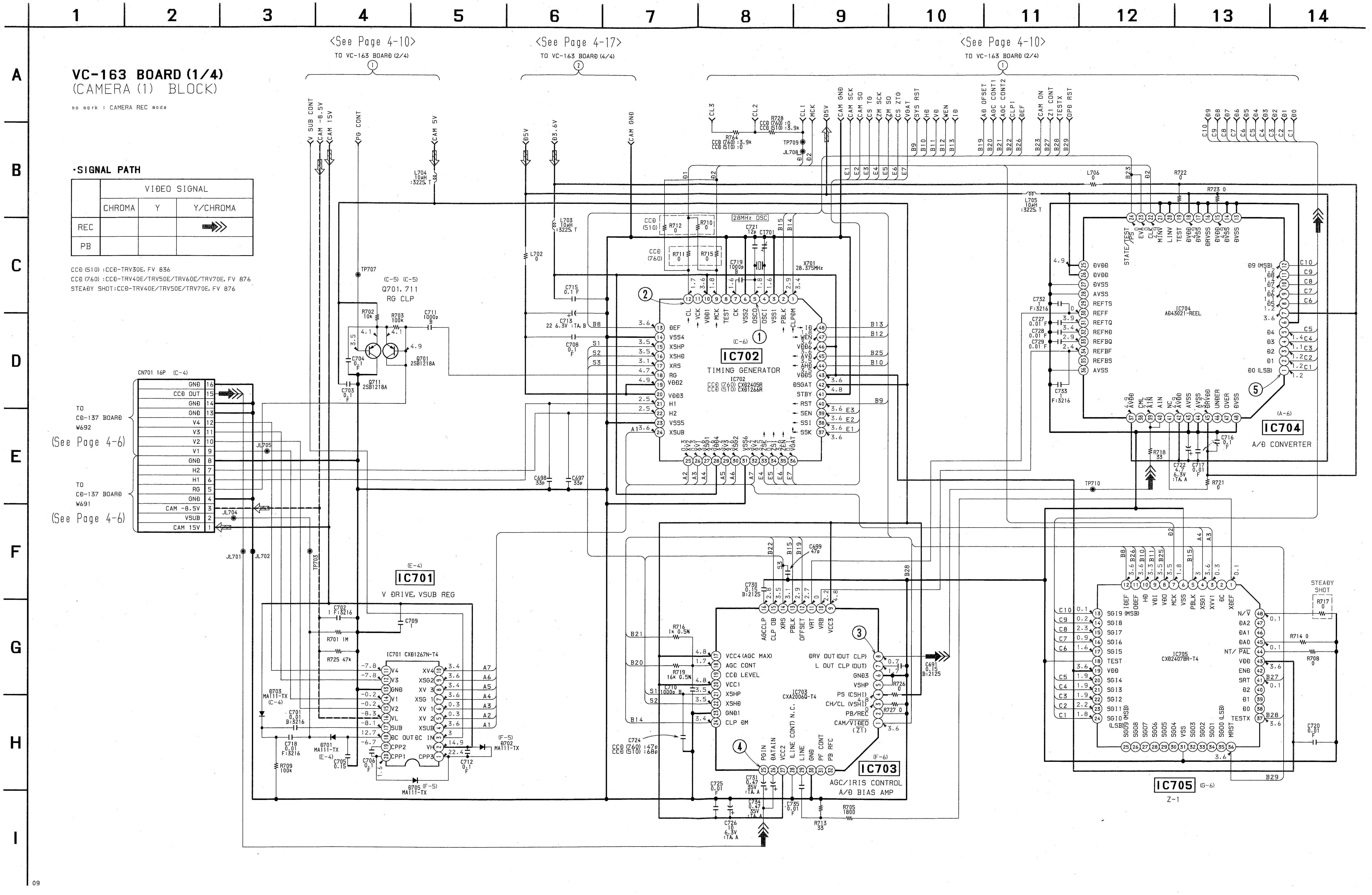
ve)

, Lens Drive,
Shot Control

p)

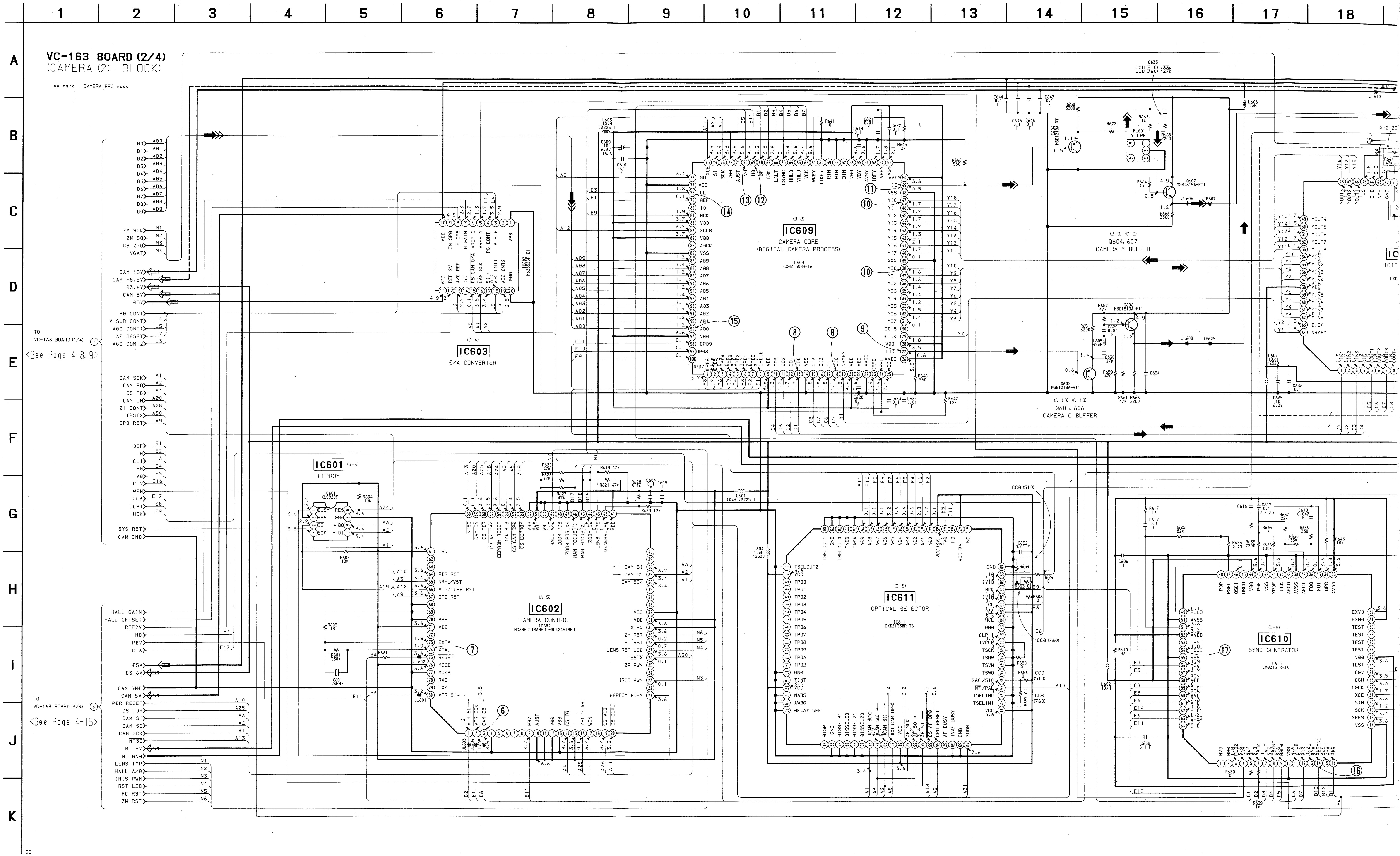
VC-163 (CAMERA 1) SCHEMATIC DIAGRAM

< > : The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.
( ) : The pages above correspond to SERVICE MANUAL (Original).

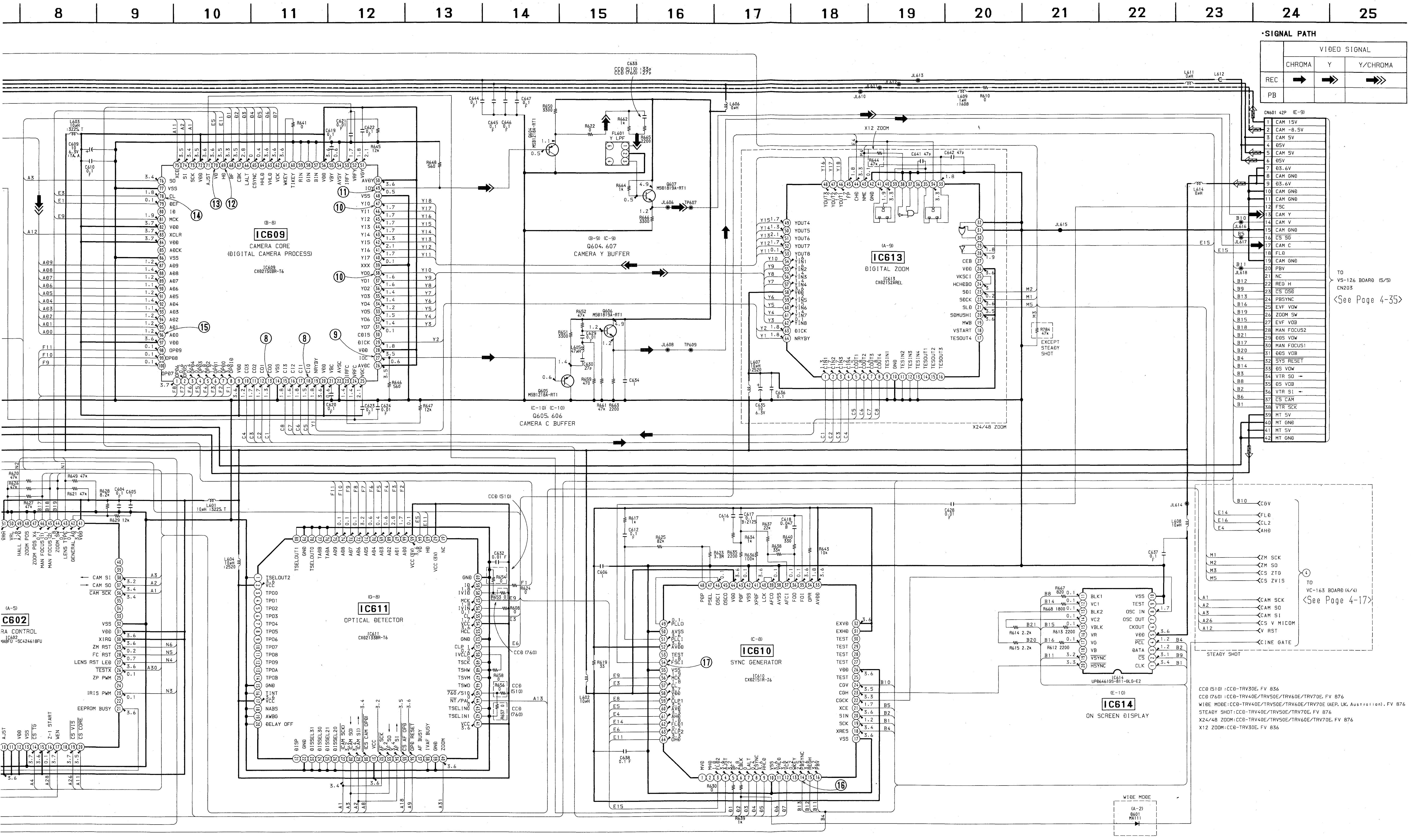

1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I
VC-163 BOARD (1/4)
(CAMERA (1) BLOCK)
no mark : CAMERA REC mode
·SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
REC
PB
CCD (510) :CCD-TRV30E, FV 836
CCD (760) :CCD-TRV40E/TRV50E/TRV60E/TRV70E, FV 876
STEADY SHOT:CCD-TRV40E/TRV50E/TRV70E, FV 876
<See Page 4-10>
TO VC-163 BOARD (2/4)
<See Page 4-17>
TO VC-163 BOARD (4/4)
<See Page 4-10>
TO VC-163 BOARD (2/4)
V SUB CONT
CAM -8.5V
CAM 15V
PG CONT
CAM 5V
D5V
D3.6V
CAM GND
CN701 16P (C-4)
GND
CCD OUT
V4
V3
V2
V1
H2
H1
RG
CAM -8.5V
VSUB
CAM 15V
TO
CD-137 BOARD
W692
(See Page 4-6)
TO
CD-137 BOARD
W691
(See Page 4-6)
Q701, 711
RG CLP
Q701 2SB1218A
Q711 2SB1218A
IC702
TIMING GENERATOR
IC702
CCD (760) CXD2405R
CCD (510) CXD1266R
28MHz OSC
X701 28.375MHz
IC701
V DRIVE, VSUB REG
IC701 CXD1267N-T4
D703 MA111-TX
D701 MA111-TX
D702 MA111-TX
D705 MA111-TX
IC703
AGC/IRIS CONTROL
A/D BIAS AMP
IC703 CXA2006Q-T4
IC704
A/D CONVERTER
IC704 AD43021-REEL
IC705
Z-1
IC705 CXD2407BR-T4
STEADY SHOT
TP707
TP709
TP710
JL701
JL702
JL704
JL705
JL706
TP703
09

- Refer to page 4-5 for Printed Wiring Board.

< >: The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.


VC-163 BOARD (2/4)
(CAMERA (2) BLOCK)
no mark : CAMERA REC mode
IC603 D/A CONVERTER
IC609 CAMERA CORE (DIGITAL CAMERA PROCESS) CXD2150BR-T6
Q604, 607 CAMERA Y BUFFER
Q605, 606 CAMERA C BUFFER
IC601 EEPROM
IC602 CAMERA CONTROL MC68HC11MA8FU -SC424618FU
IC611 OPTICAL DETECTOR CXD2135BR-T6
IC610 SYNC GENERATOR CXD2151R-T6
TO VC-163 BOARD (1/4) ① <See Page 4-8, 9>
TO VC-163 BOARD (3/4) ③ <See Page 4-15>
09

< >: The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.

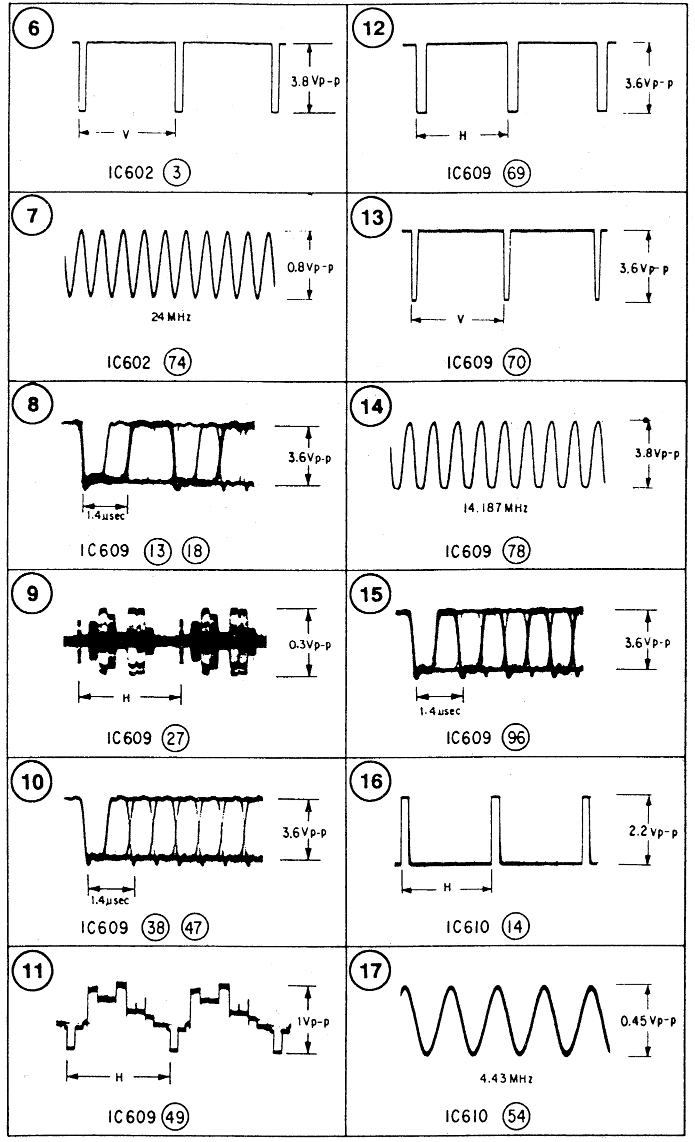

8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
(B-8)
IC609
CAMERA CORE
(DIGITAL CAMERA PROCESS)
IC609
CX021508R-T6
(B-9) (C-9)
Q604, 607
CAMERA Y BUFFER
(C-10) (C-10)
Q605, 606
CAMERA C BUFFER
X12 ZOOM
(A-9)
IC613
DIGITAL ZOOM
IC613
CX02152AREL
X24/48 ZOOM
CN601 42P (E-9)
CAM 15V
CAM -8.5V
CAM 5V
Ð5V
CAM 5V
Ð5V
Ð3.6V
CAM GND
Ð3.6V
CAM GND
CAM GND
FSC
CAM Y
CAM V
CAM GND
CS SG
CAM C
FLÐ
CAM GND
PBV
NC
REG H
CS OSÐ
PBSYNC
EVF VDW
ZOOM SW
EVF VDB
MAN FOCUS2
ØÐS VDW
MAN FOCUS1
ØÐS VDB
SYS RESET
ØS VDW
ØS VDB
VTR SO
VTR SI
CS CAM
VTR SCK
MT 5V
MT GND
MT 5V
MT GND
TO
VS-126 BOARD (5/5)
CN203
<See Page 4-35>
EXCEPT
STEADY
SHOT
(G-8)
IC611
OPTICAL DETECTOR
IC611
CX02133BR-T6
(C-8)
IC610
SYNC GENERATOR
IC610
CX02151R-T6
(E-10)
IC614
ON SCREEN DISPLAY
IC614
UPD6461GS-811-OLG-E2
TO
VC-163 BOARD (4/4)
<See Page 4-17>
STEADY SHOT
WIDE MODE
(A-2)
D601
MA111
(A-5)
IC602
CAMERA CONTROL
CCD (510)
CCD (760)

·SIGNAL PATH

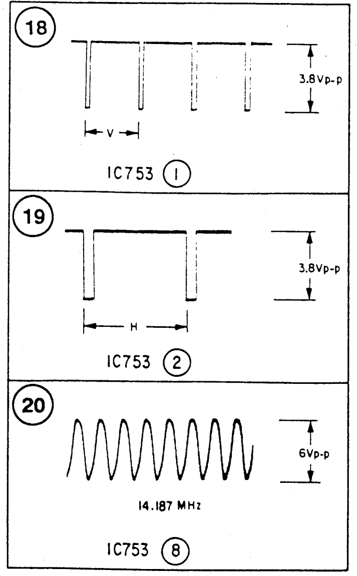
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	⇛	⇛
PB			

CCD (510) :CCD-TRV30E, FV 836
CCD (760) :CCD-TRV40E/TRV50E/TRV60E/TRV70E, FV 876
WIDE MODE:CCD-TRV40E/TRV50E/TRV60E/TRV70E (AEP, UK, Australian), FV 876
STEADY SHOT:CCD-TRV40E/TRV50E/TRV70E, FV 876
X24/48 ZOOM:CCD-TRV40E/TRV50E/TRV60E/TRV70E, FV 876
X12 ZOOM:CCD-TRV30E, FV 836

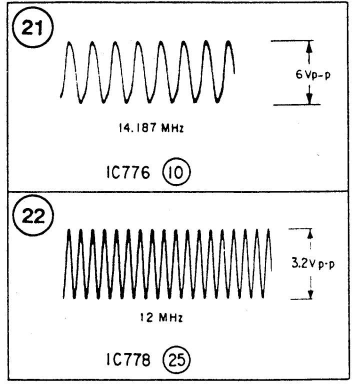
VC-163 BOARD(2/4)



VC-163 BOARD(3/4)



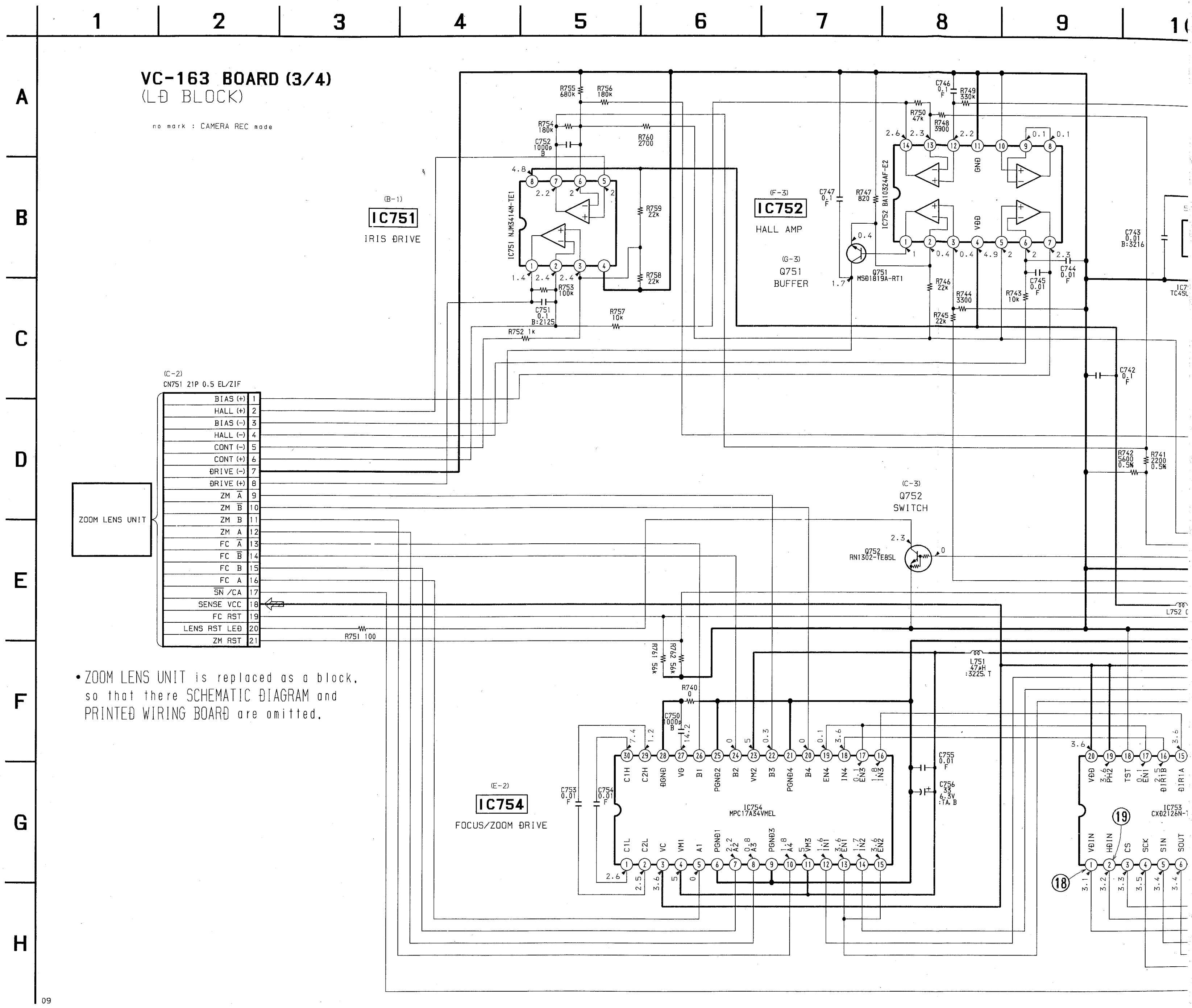
VC-163 BOARD(4/4)



VC-163 (LENS DRIVE) SCHEMATIC DIAGRAM

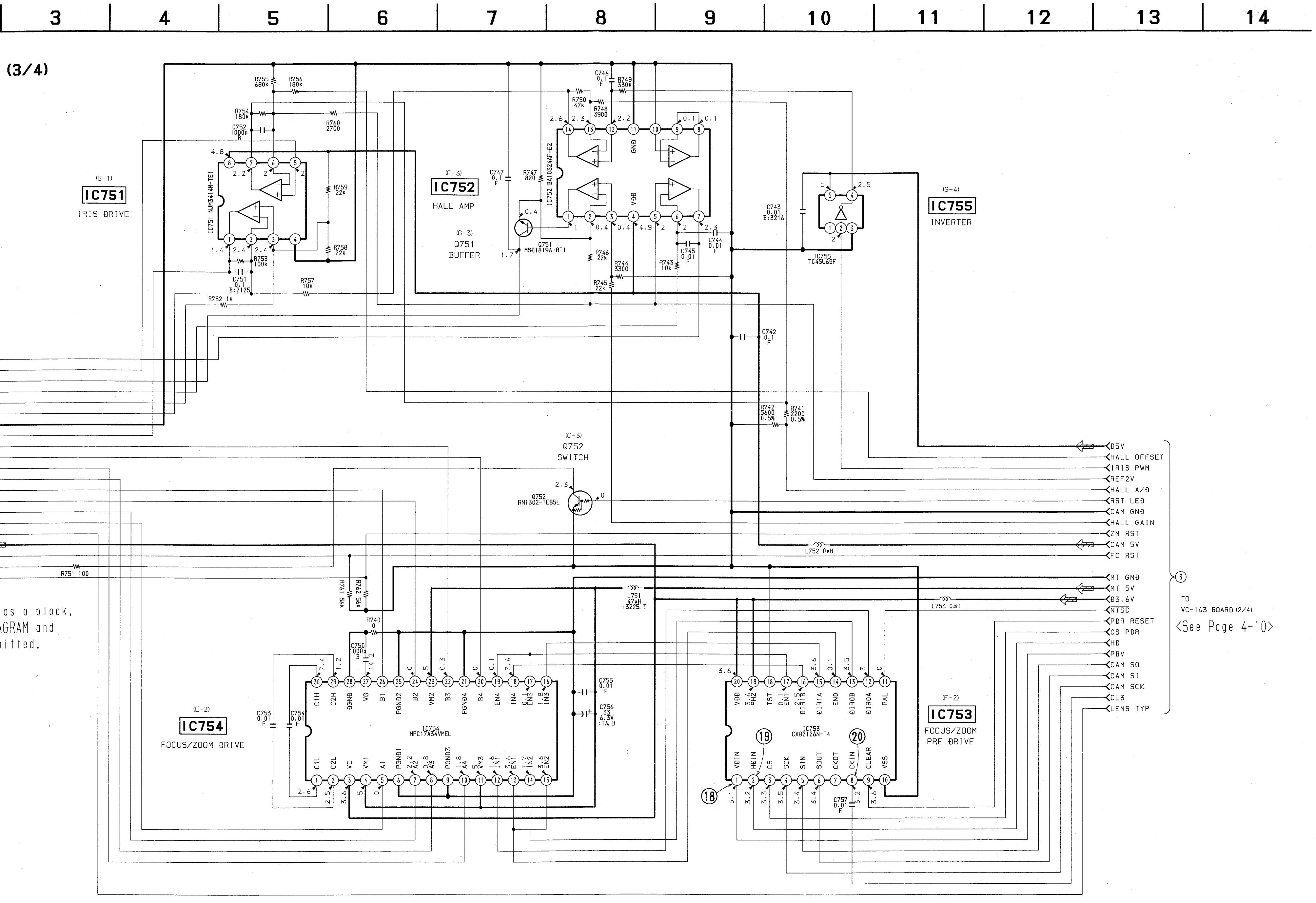
- Refer to page 4–5 for Printed Wiring Board.

< >: The pages above corresp
SUPPLEMENT-1.

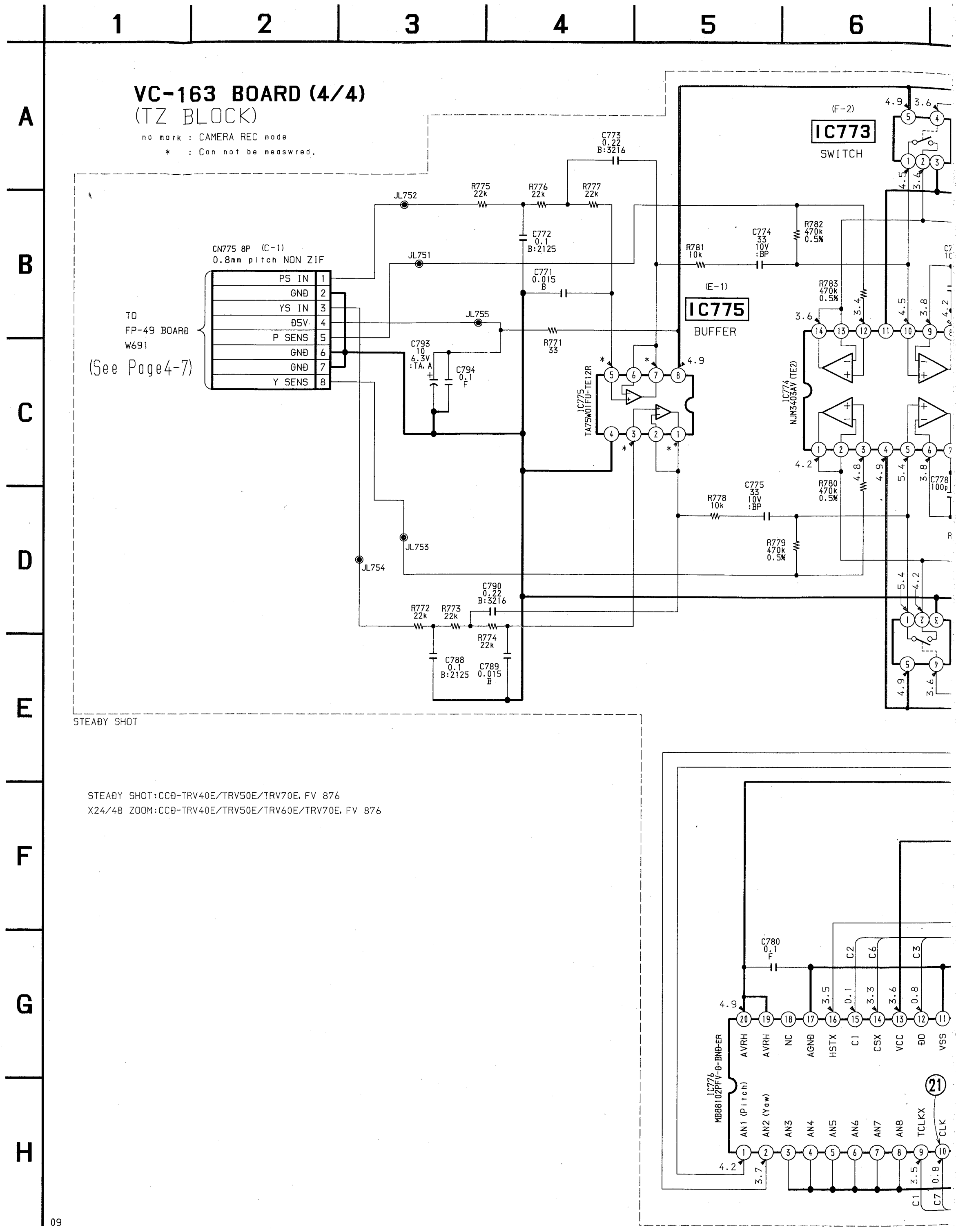

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
VC-163 BOARD (3/4)
(LD BLOCK)
no mark : CAMERA REC mode
(B-1)
IC751
IRIS DRIVE
IC751 NJM3414M-TE1
(F-3)
IC752
HALL AMP
IC752 BA10324AF-E2
(G-3)
Q751
BUFFER
Q751 MSD1819A-RT1
(C-3)
Q752
SWITCH
Q752 RN1302-TE85L
(E-2)
IC754
FOCUS/ZOOM DRIVE
IC754 MPC17A34VMEL
IC753 CX02126N-T
(C-2)
CN751 21P 0.5 EL/ZIF
BIAS (+) 1
HALL (+) 2
BIAS (–) 3
HALL (–) 4
CONT (–) 5
CONT (+) 6
DRIVE (–) 7
DRIVE (+) 8
ZM A̅ 9
ZM B̅ 10
ZM B 11
ZM A 12
FC A̅ 13
FC B̅ 14
FC B 15
FC A 16
S̅N̅ /CA 17
SENSE VCC 18
FC RST 19
LENS RST LED 20
ZM RST 21
ZOOM LENS UNIT
R751 100
R755 680k
R756 180k
R754 180k
C752 1000p B
R760 2700
R759 22k
R758 22k
R753 100k
C751 0.1 B:2125
R752 1k
R757 10k
C747 0.1 F
R747 820
C746 0.1 F
R749 330k
R750 47k
R748 3900
R746 22k
R744 3300
R745 22k
R743 10k
C745 0.01 F
C744 0.01 F
C743 0.01 B:3216
C742 0.1 F
R742 5600 0.5%
R741 2200 0.5%
L751 47μH :3225.T
L752
R740 0
C750 0.0068 B
R761 56k
C753 0.01 F
C754 0.01 F
C755 0.01 F
C756 33 6.3V :TA B
C1H
C2H
DGND
VG
B1
PGND2
B2
VM2
B3
PGND4
B4
EN4
IN4
EN3
IN3
C1L
C2L
VC
VM1
A1
PGND1
A2
A3
PGND3
A4
VM3
IN1
EN1
IN2
EN2
VDD
PH2
TST
EN1
DIRIB
DIR1A
VBIN
HBIN
CS
SCK
SIN
SOUT
GND
VDD
09

- ZOOM LENS UNIT is replaced as a block, so that there SCHEMATIC DIAGRAM and PRINTED WIRING BOARD are omitted.

< >: The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.


3
4
5
6
7
8
9
10
11
12
13
14
(3/4)
IC751 IRIS DRIVE
IC751 NJM3414M-TE1
IC752 HALL AMP
IC752 BA10324AF-E2
Q751 BUFFER
Q751 MSB1819A-RT1
IC755 INVERTER
IC755 TC4SU69F
Q752 SWITCH
Q752 RN1302-TE85L
IC754 FOCUS/ZOOM DRIVE
IC754 MPC17A54VMEL
IC753 FOCUS/ZOOM PRE DRIVE
IC753 CXD2126N-T4
L751 47μH
L752 0μH
L753 0μH
R751 100
Ð5V
HALL OFFSET
IRIS PWM
REF2V
HALL A/Ð
RST LEÐ
CAM GNÐ
HALL GAIN
ZM RST
CAM 5V
FC RST
MT GNÐ
MT 5V
Ð3.6V
NTSC
PÐR RESET
CS PÐR
HÐ
PBV
CAM SO
CAM SI
CAM SCK
CL3
LENS TYP
③
TO
VC-163 BOARÐ (2/4)
<See Page 4-10>
⑱
⑲
⑳

as a block.
AGRAM and
itted.

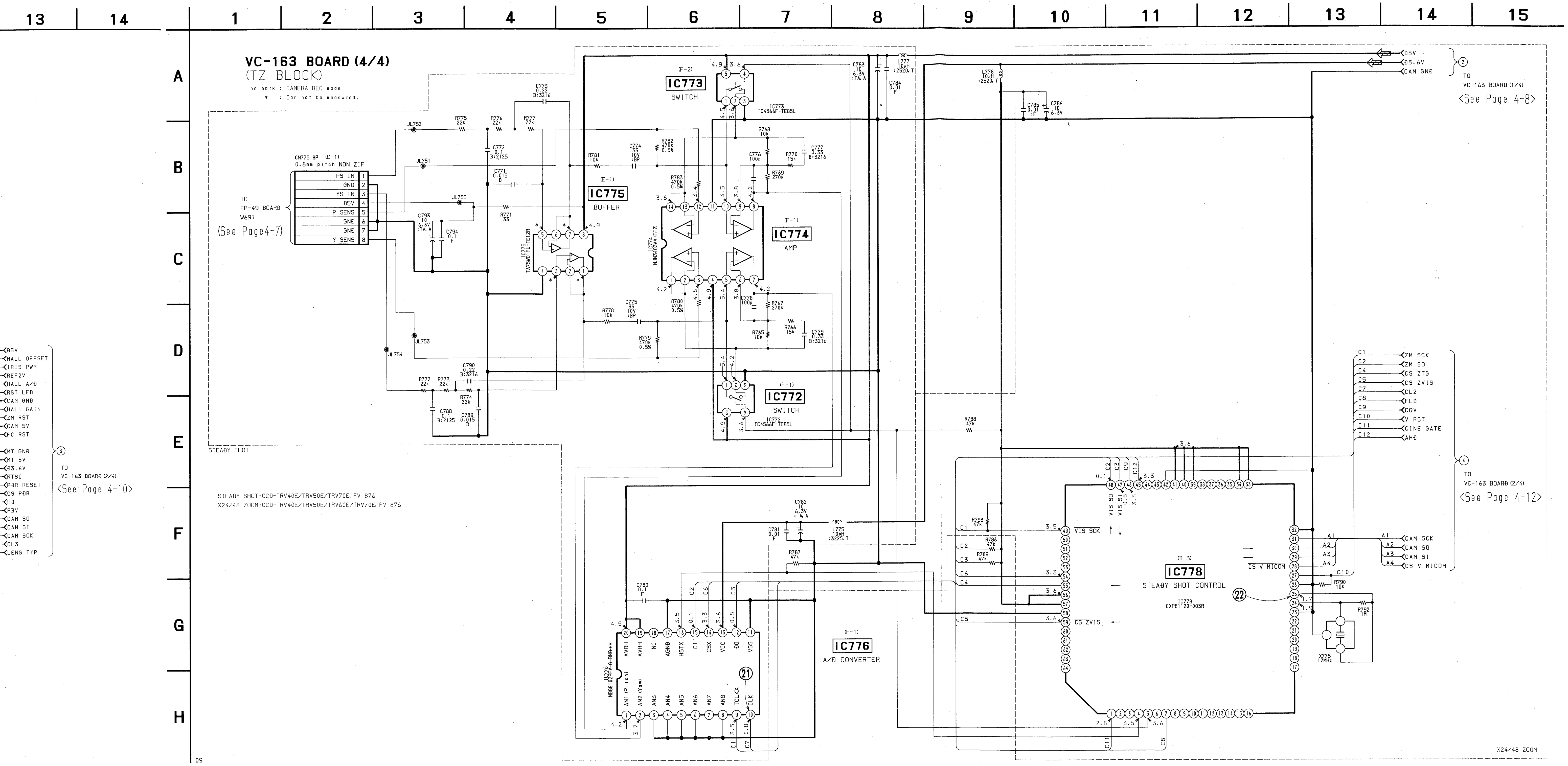

1
2
3
4
5
6
A
B
C
D
E
F
G
H
VC-163 BOARD (4/4)
(TZ BLOCK)
no mark : CAMERA REC mode
* : Can not be measwred.
CN775 8P (C-1)
0.8mm pitch NON ZIF
PS IN
GNÐ
YS IN
Ð5V
P SENS
GNÐ
GNÐ
Y SENS
TO
FP-49 BOARÐ
W691
(See Page4-7)
JL751
JL752
JL753
JL754
JL755
IC773 SWITCH
IC775 BUFFER
IC775 TA75W01FU(TE12R)
IC774 NJM3403AV(TE2)
IC776 MB88102PFV-G-BND-ER
AN1 (Pitch)
AN2 (Yaw)
STEAÐY SHOT
㉑
09

STEAÐY SHOT:CCÐ-TRV40E/TRV50E/TRV70E, FV 876
X24/48 ZOOM:CCÐ-TRV40E/TRV50E/TRV60E/TRV70E, FV 876

< > : The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.
( ) : The pages above correspond to SERVICE MANUAL (Original).

VC-163 (STEADY SHOT CONTROL) SCHEMATIC DIAGRAM

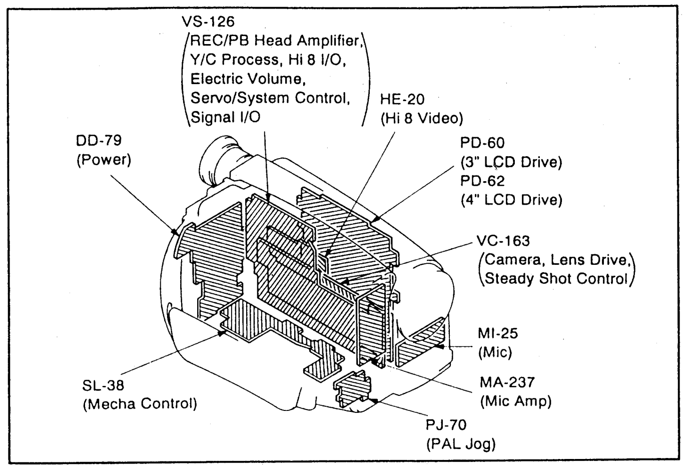
- Refer to page 4-5 for Printed Wiring Board.


13
14
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
VC-163 BOARD (4/4)
(TZ BLOCK)
no mark : CAMERA REC mode
* : Can not be measwred.
CN775 8P (C-1)
0.8mm pitch NON ZIF
PS IN 1
GND 2
YS IN 3
D5V 4
P SENS 5
GND 6
GND 7
Y SENS 8
TO
FP-49 BOARD
W691
(See Page4-7)
JL752
JL751
JL755
JL753
JL754
R775 22k
R776 22k
R777 22k
C773 0.22 B:3216
C772 0.1 B:2125
C771 0.015 B
R771 33
C793 10 6.3V :TA, A
C794 0.1 F
R781 10k
IC775
TA75W01FU-TE12R
(E-1)
IC775
BUFFER
C774 33 10V :BP
R782 470k 0.5%
R783 470k 0.5%
IC774
NJM3403AV (TE2)
(F-1)
IC774
AMP
R768 10k
C776 100p
R770 15k
C777 0.33 B:3216
R769 270k
C778 100p
R767 270k
R766 15k
R765 10k
C779 0.33 B:3216
C775 33 10V :BP
R778 10k
R780 470k 0.5%
R779 470k 0.5%
C790 0.22 B:3216
R772 22k
R773 22k
R774 22k
C788 0.1 B:2125
C789 0.015 B
(F-2)
IC773
SWITCH
IC773 TC4S66F-TE85L
(F-1)
IC772
SWITCH
IC772 TC4S66F-TE85L
C783 10 6.3V :TA, A
C784 0.01 F
L777 10µH :2520, T
L778 10µH :2520, T
C785 0.01 :F
C786 10 6.3V
STEADY SHOT
D5V
HALL OFFSET
IRIS PWM
REF2V
HALL A/D
RST LED
CAM GND
HALL GAIN
ZM RST
CAM 5V
FC RST
MT GND
MT 5V
D3.6V
NTSC
PDR RESET
CS PDR
HD
PBV
CAM SO
CAM SI
CAM SCK
CL3
LENS TYP
③
TO
VC-163 BOARD (2/4)
<See Page 4-10>
STEADY SHOT:CCD-TRV40E/TRV50E/TRV70E, FV 876
X24/48 ZOOM:CCD-TRV40E/TRV50E/TRV60E/TRV70E, FV 876
C782 10 6.3V :TA, A
C781 0.01 F
L775 10µH :3225, T
R787 47k
C780 0.1 F
IC776
MB88102PFV-G-BND-ER
AVRH
AVRL
NC
AGND
HSTX
CI
CSX
VCC
DO
VSS
AN1 (Pitch)
AN2 (Yaw)
AN3
AN4
AN5
AN6
AN7
AN8
TCLKX
CLK
㉑
(F-1)
IC776
A/D CONVERTER
R788 47k
R793 47k
R784 47k
R789 47k
VIS SCK
VIS SO
VIS SI
CS V MICOM
CS ZVIS
(B-3)
IC778
STEADY SHOT CONTROL
IC778 CXP81120-003R
㉒
R790 10k
R792 1M
X775 12MHz
D5V
D3.6V
CAM GND
②
TO
VC-163 BOARD (1/4)
<See Page 4-8>
C1 ZM SCK
C2 ZM SO
C4 CS ZTG
C5 CS ZVIS
C7 CL2
C8 FLD
C9 CGV
C10 V RST
C11 CINE GATE
C12 AHD
④
TO
VC-163 BOARD (2/4)
<See Page 4-12>
A1 CAM SCK
A2 CAM SO
A3 CAM SI
A4 CS V MICOM
X24/48 ZOOM
09

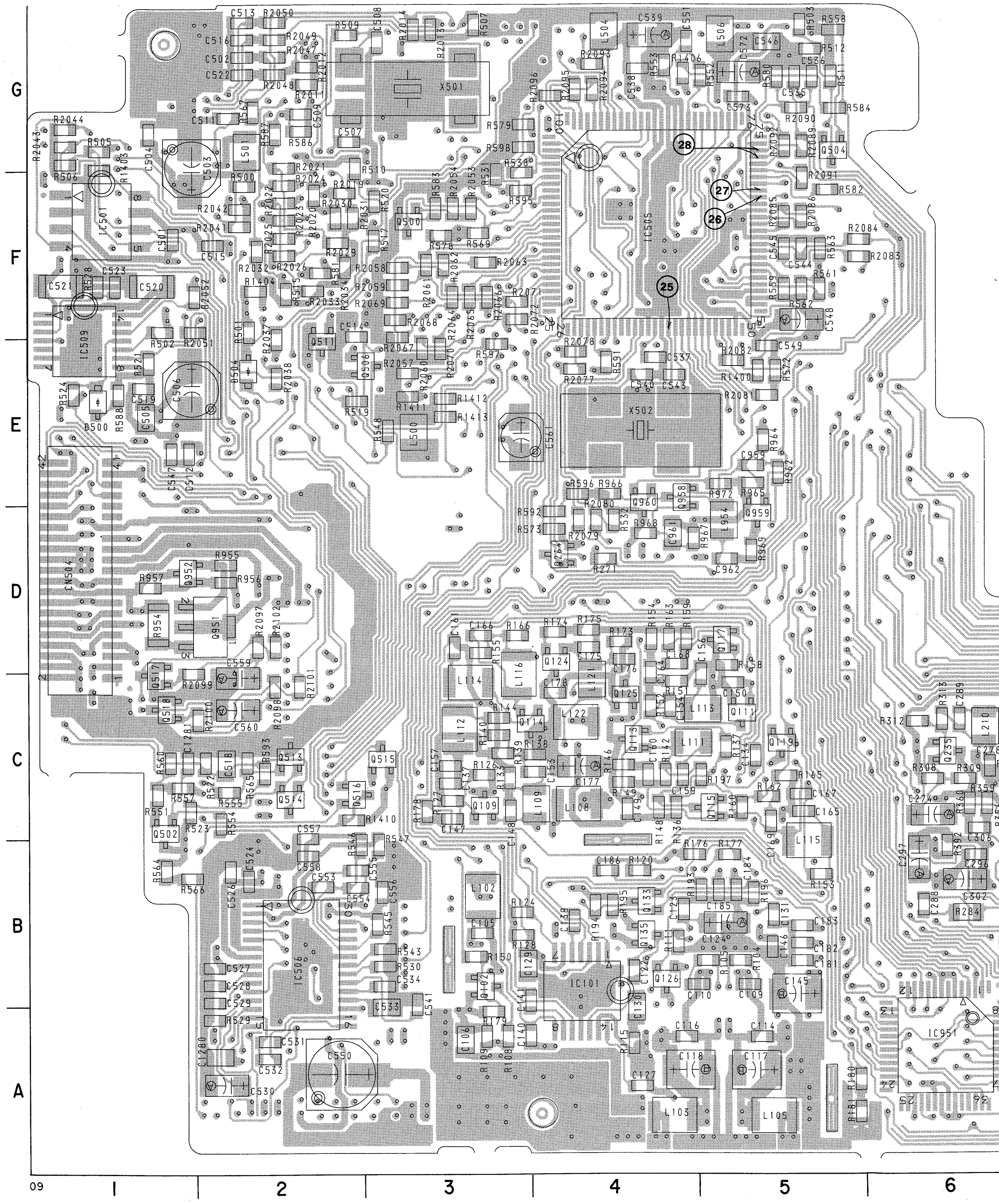
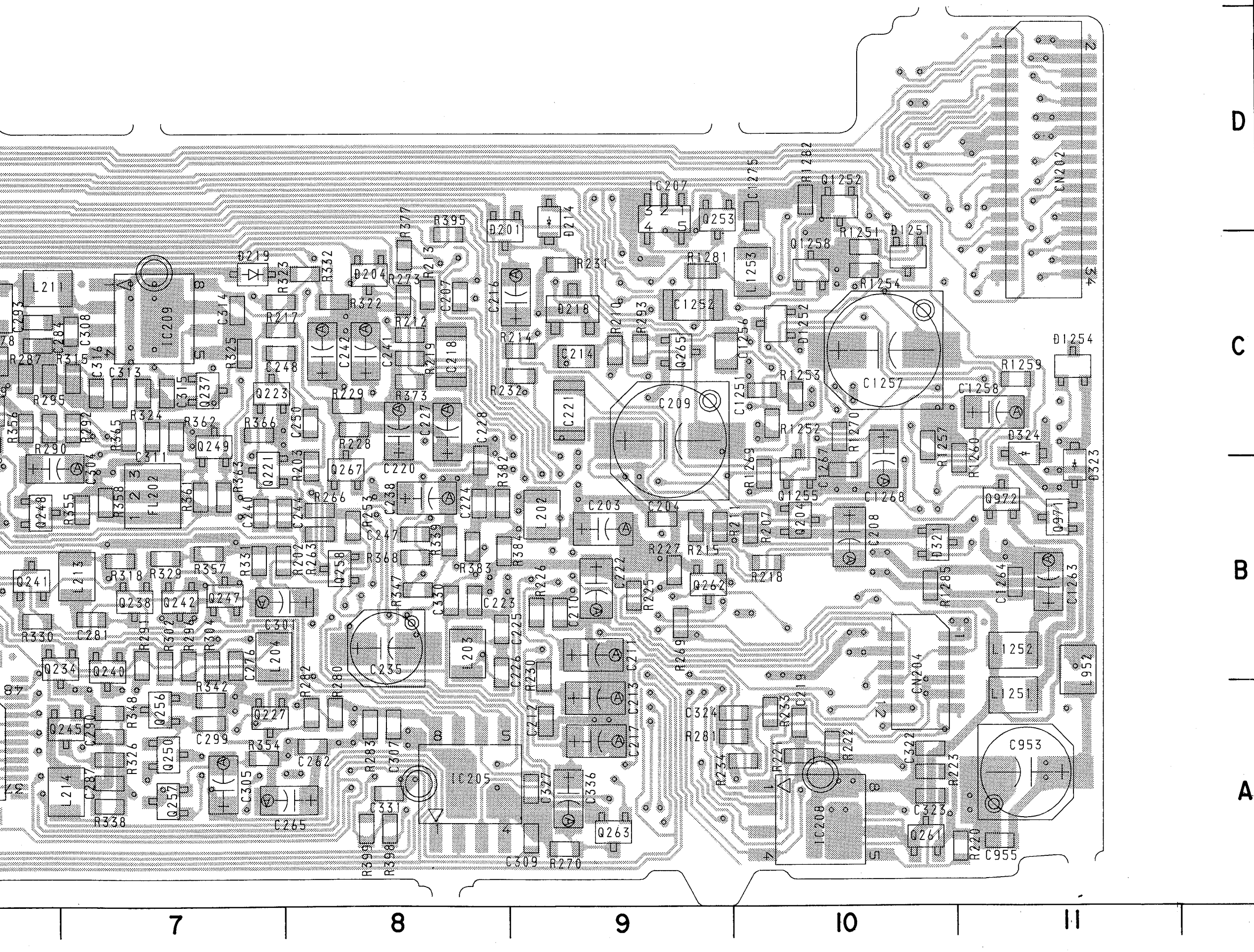
VS-126 (REC/PB HEAD AMPLIFIER, Y/C PROCESS, Hi 8 I/O, ELECTRIC VOLUME, SERVO/SYSTEM CONTROL, SIGNAL I/O) PRINTED WIRING BOARD

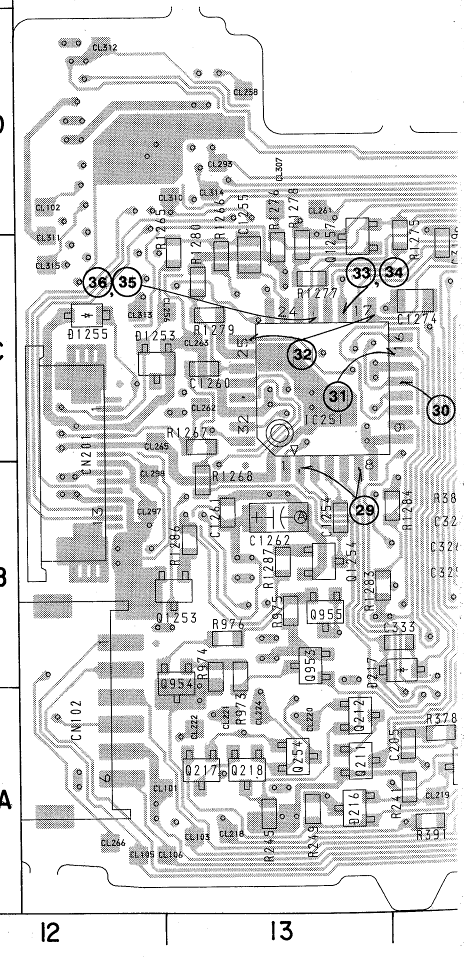
- When VS-126 Board is replaced, it should be replaced with SL-38 Board together.

There are few cases that the part isn't mounted in this model is printed on this diagram.

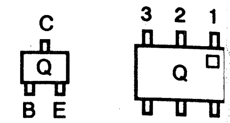

VS-126
(REC/PB Head Amplifier, Y/C Process, Hi 8 I/O, Electric Volume, Servo/System Control, Signal I/O)
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive, Steady Shot Control)
MI-25
(Mic)
SL-38
(Mecha Control)
MA-237
(Mic Amp)
PJ-70
(PAL Jog)

VS-126 BOARD (COMPONENT SIDE)



G
F
E
D
C
B
A
09
1
2
3
4
5
6
7
8
9
10
11
IC501
IC509
IC503
IC505
IC506
IC101
IC951
IC205
IC208
IC209
X501
X502
CN504
CN202
25
26
27
28

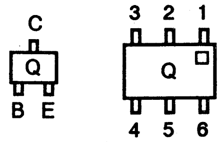

12
13
CN201
CN102
29
30
31
32
33
34
35
36

- **For printed wiring boards.**
- This board is a four-layer print board. Ho
of layers 2 to 3 have not been included ir
- Chip transistor


C
Q
B E
3 2 1
Q
4 5 6

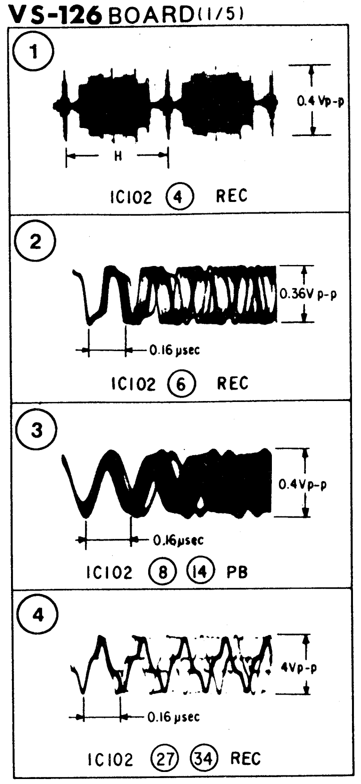
- ○: Through hole is omitted.

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor

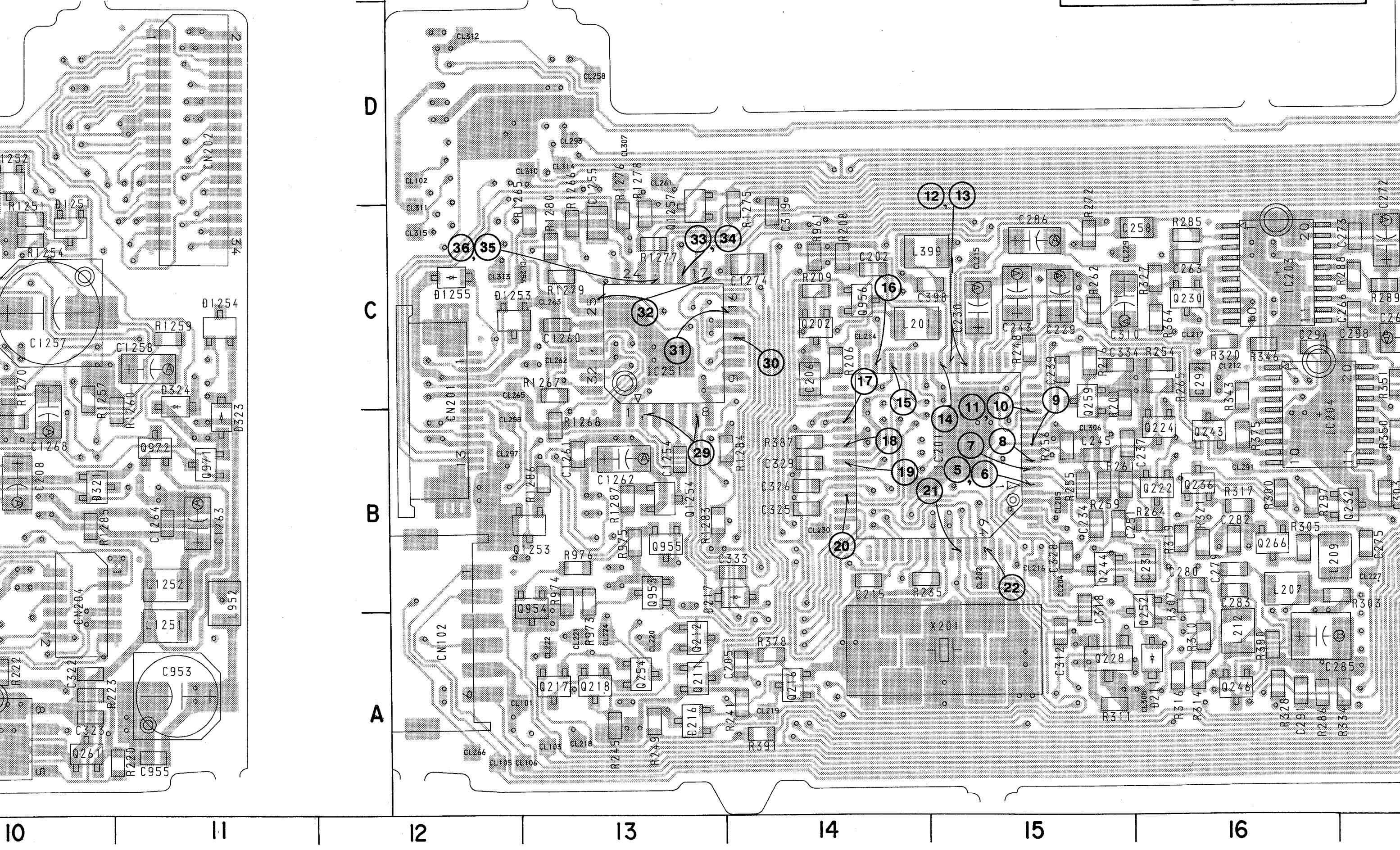

C
Q
B E
3 2 1
Q
4 5 6

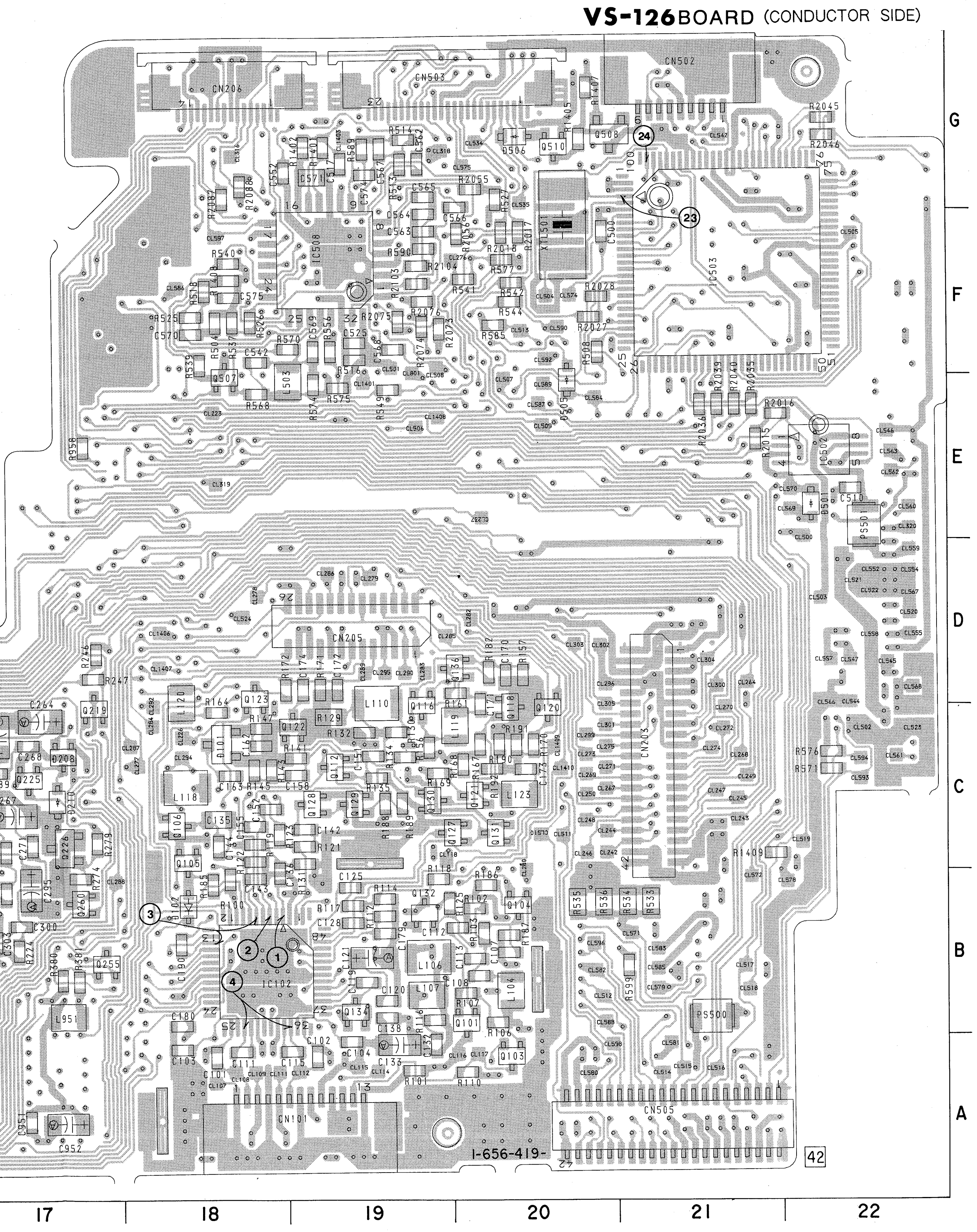
- ○: Through hole is omitted.

VS-126 BOARD(1/5)



VS-126 BOARD (CONDUCTOR SIDE)


G
F
E
D
C
B
A
CN242
IC1251
CN102
CN201
IC201
X201
IC203
IC204
10
11
12
13
14
15
16
17

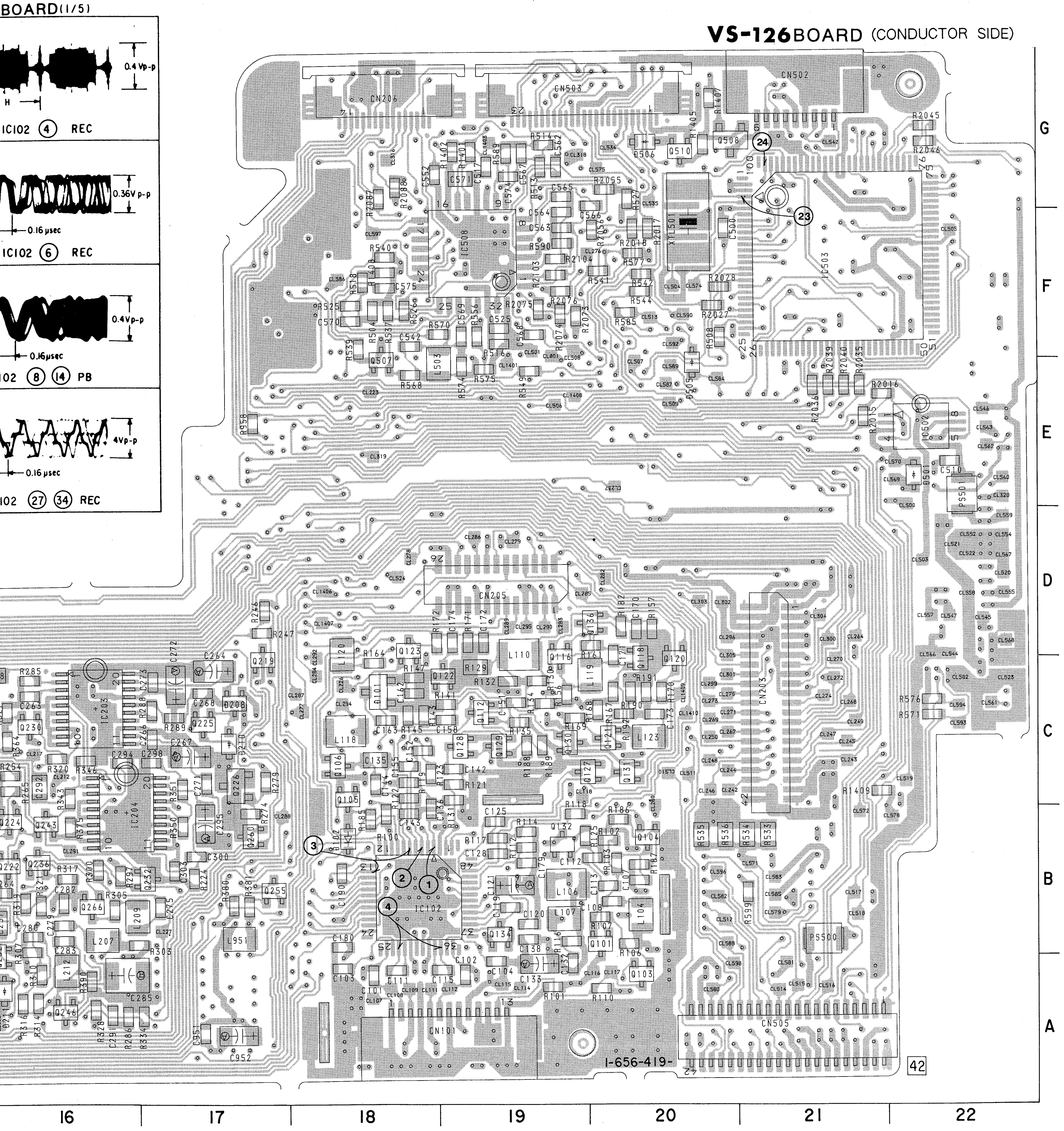

CN206
CN503
CN502
IC508
IC503
CN205
CN203
IC102
CN101
CN505
1-656-419-
42
G
F
E
D
C
B
A
18
19
20
21
22

VS-126 BOA

C101	A-1
C102	A-1
C103	A-1
C104	A-1
C106	A-3
C107	B-2
C108	B-2
C109	B-5
C110	B-4
C111	A-1
C112	B-1
C113	B-2
C114	A-5
C115	A-1
C116	A-4
C117	A-5
C118	A-4
C119	B-1
C121	B-1
C122	B-4
C124	B-5
C128	B-1
C131	B-5
C134	C-5
C135	C-1
C136	B-1
C137	C-3
C143	B-1
C145	B-5
C146	B-5
C147	C-3
C148	C-3
C149	C-4
C150	C-5
C151	C-1
C152	C-1
C153	C-4
C154	C-4
C155	C-1
C156	D-5
C158	C-1
C159	C-4
C160	C-4
C161	D-3
C162	C-1
C163	C-1
C164	C-4
C165	C-5
C166	D-3
C167	C-5
C168	D-4
C169	C-5
C170	D-2
C171	C-2
C172	D-1
C173	C-2
C175	D-4
C176	D-4
C177	C-4
C178	C-4
C179	B-1
C190	B-1
C202	C-1
C203	B-9
C206	C-1
C207	C-8
C208	B-1
C209	C-9
C210	B-9
C211	B-9
C212	A-9
C213	A-9
C214	C-9
C215	B-1
C216	C-8
C217	A-9
C218	C-8
C220	C-8
C221	C-9
C222	B-9
C227	C-8
C228	C-8
C229	C-1
C230	C-1
C231	B-1
C234	B-1
C235	B-8
C238	B-8
C239	C-1
C240	B-7
C241	C-8
C242	C-8
C243	C-1
C244	B-7
C245	B-1
C247	B-8
C248	C-7
C250	C-8
C251	B-1
C258	C-1
C262	A-8
C263	C-1
C264	C-1
C266	C-1
C267	C-1
C268	C-1
C271	C-1
C272	C-1
C274	C-6
C275	B-1
C276	B-7
C279	B-1

BOARD(1/5)

VS-126BOARD (CONDUCTOR SIDE)

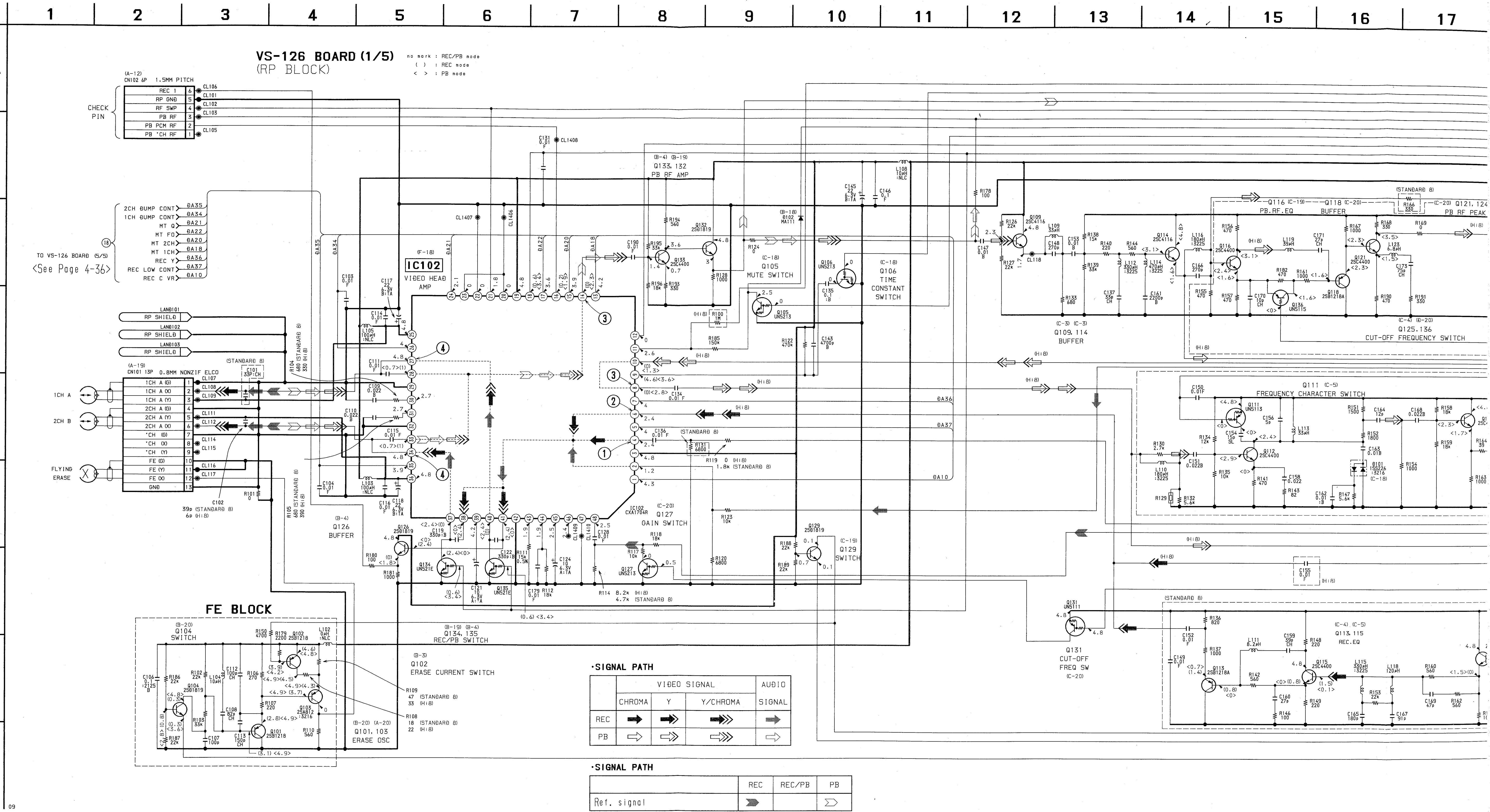


VS-126 BOARD

C101	A-18
C102	A-19
C103	A-18
C104	A-19
C106	A-3
C107	B-20
C108	B-20
C109	B-5
C110	B-4
C111	A-18
C112	B-19
C113	B-20
C114	A-5
C115	A-19
C116	A-4
C117	A-5
C118	A-4
C119	B-19
C121	B-19
C122	B-4
C124	B-5
C128	B-19
C131	B-5
C134	C-5
C135	C-18
C136	B-18
C137	C-3
C143	B-18
C145	B-5
C146	B-5
C147	C-3
C148	C-3
C149	C-4
C150	C-5
C151	C-19
C152	C-18
C153	C-4
C154	C-4
C155	C-18
C156	D-5
C158	C-19
C159	C-4
C160	C-4
C161	D-3
C162	C-18
C163	C-18
C164	C-4
C165	C-5
C166	D-3
C167	C-5
C168	D-4
C169	C-5
C170	D-20
C171	C-20
C172	D-19
C173	C-20
C175	D-4
C176	D-4
C177	C-4
C178	C-4
C179	B-19
C190	B-18
C202	C-14
C203	B-9
C206	C-14
C207	C-8
C208	B-10
C209	C-9
C210	B-9
C211	B-9
C212	A-9
C213	A-9
C214	C-9
C215	B-14
C216	C-8
C217	A-9
C218	C-8
C220	C-8
C221	C-9
C222	B-9
C227	C-8
C228	C-8
C229	C-15
C230	C-15
C231	B-16
C234	B-15
C235	B-8
C238	B-8
C239	C-15
C240	B-7
C241	C-8
C242	C-8
C243	C-15
C244	B-7
C245	B-15
C247	B-8
C248	C-7
C250	C-8
C251	B-15
C258	C-16
C262	A-8
C263	C-16
C264	C-17
C266	C-17
C267	C-17
C268	C-17
C271	C-17
C272	C-17
C274	C-6
C275	B-17
C276	B-7
C279	B-16
C281	B-7
C282	B-16
C284	C-6
C285	A-16
C286	C-15
C288	B-6
C289	C-6
C291	A-16
C292	C-16
C293	C-6
C294	C-16
C295	B-17
C296	B-6
C297	B-6
C298	C-17
C300	B-17
C301	B-7
C302	B-6
C303	B-17
C304	B-6
C305	A-7
C306	C-6
C307	A-8
C308	C-7
C310	C-15
C311	C-7
C312	A-15
C314	C-7
C315	C-7
C316	C-7
C328	B-15
C331	A-8
C336	A-9
C398	C-15
C500	F-20
C501	F-1
C502	G-2
C503	G-2
C504	G-1
C506	E-1
C507	G-2
C508	G-3
C509	G-2
C510	E-22
C511	G-2
C512	E-1
C513	G-2
C514	F-2
C516	G-2
C518	C-2
C520	F-1
C521	F-1
C522	G-2
C523	F-1
C524	B-2
C525	F-19
C526	B-2
C527	B-2
C528	B-2
C529	B-3
C530	A-2
C531	A-2
C532	A-2
C533	B-3
C534	B-2
C535	G-5
C536	G-5
C537	E-4
C539	G-4
C540	E-4
C541	B-3
C543	E-4
C544	F-5
C545	F-5
C546	G-5
C547	E-1
C548	F-5
C549	E-5
C550	A-2
C553	B-2
C554	B-2
C555	B-2
C556	B-3
C557	C-2
C558	B-2
C559	C-2
C560	C-2
C561	E-3
C562	G-19
C563	F-19
C564	F-19
C565	F-19
C566	F-20
C567	G-19
C568	F-19
C569	F-19
C570	F-18
C571	G-19
C573	G-4
C951	A-17
C955	A-11
C959	E-5
C961	D-4
C962	D-5
C1251	C-10
C1252	C-9
C1254	B-13
C1255	C-13
C1256	C-9
C1257	C-10
C1258	C-11
C1260	C-13
C1261	B-13
C1262	B-13
C1263	B-11
C1264	B-11
C1268	B-10
C1274	C-14
C1275	D-10
C1280	A-2
C1281	C-1
CN101	A-19
CN102	A-12
CN201	C-12
CN202	D-11
CN203	C-21
CN204	B-10
CN205	D-19
CN206	G-18
CN502	G-21
CN503	G-19
CN504	D-1
CN505	A-21
D101	C-18
D102	B-18
D201	D-8
D204	C-8
D208	C-17
D214	D-9
D216	A-13
D218	C-9
D219	C-7
D321	B-10
D323	B-11
D324	C-11
D500	E-1
D501	E-22
D504	E-2
D505	E-20
D506	G-20
D1251	C-10
D1252	C-10
D1253	C-12
D1254	C-11
D1255	C-12
FL202	B-7
IC102	B-18
IC201	B-15
IC203	C-16
IC204	B-16
IC205	A-8
IC209	C-7
IC251	C-13
IC501	F-1
IC502	E-22
IC503	F-21
IC505	F-4
IC506	B-2
IC508	F-19
IC509	E-1
IC951	A-6
L102	B-3
L103	A-4
L104	B-20
L105	A-5
L108	C-4
L109	C-4
L110	C-19
L111	C-4
L112	C-3
L113	C-5
L114	C-3
L115	C-5
L116	C-3
L118	C-18
L119	C-20
L120	C-18
L121	C-4
L122	C-4
L123	C-20
L201	C-14
L202	B-9
L204	B-7
L207	B-16
L209	B-16
L210	C-6
L211	C-6
L213	B-7
L214	A-6
L399	C-14
L500	E-3
L501	G-2
L503	E-19
L504	G-4
L506	G-5
L951	B-17
L952	B-11
L954	D-5
L1251	A-11
L1252	B-11
L1253	C-10
PS500	B-21
PS501	E-22
Q101	B-20
Q102	B-3
Q103	A-20
Q104	B-20
Q105	C-18
Q106	C-18
Q109	C-3
Q111	C-5
Q112	C-19
Q113	C-4
Q114	C-3
Q115	C-5
Q116	C-19
Q117	D-5
Q118	C-20
Q119	C-5
Q121	C-20
Q124	D-4
Q125	C-4
Q126	B-4
Q127	C-19
Q129	C-19
Q131	C-20
Q132	B-19
Q133	B-4
Q134	B-19
Q135	B-4
Q136	D-20
Q202	C-14
Q204	B-10
Q211	A-13
Q212	A-13
Q217	A-13
Q218	A-13
Q219	C-17
Q221	B-7
Q222	B-16
Q223	C-7
Q224	B-16
Q225	C-17
Q226	C-17
Q227	A-7
Q228	A-15
Q230	C-16
Q232	B-17
Q235	C-6
Q236	B-16
Q237	C-7
Q238	B-7
Q240	B-7
Q241	B-6
Q242	B-7
Q243	B-16
Q244	B-15
Q246	A-16
Q247	B-7
Q248	B-6
Q249	C-7
Q253	D-9
Q254	A-13
Q255	B-17
Q257	A-7
Q258	B-8
Q259	C-15
Q260	B-17
Q262	B-9
Q263	A-9
Q264	D-4
Q265	C-9
Q266	B-16
Q267	B-8
Q500	F-3
Q502	C-1
Q504	G-5
Q506	E-3
Q507	E-18
Q508	G-20
Q510	G-20
Q511	E-2
Q513	C-2
Q514	C-2
Q515	C-3
Q516	C-2
Q517	C-1
Q518	C-1
Q951	D-2
Q952	D-1
Q956	C-14
Q958	E-4
Q959	D-5
Q960	E-4
Q971	B-11
Q972	B-11
Q1252	D-10
Q1253	B-13
Q1254	B-13
Q1258	C-10
R100	B-18
R101	A-19
R102	B-20
R103	B-20
R104	B-5
R105	B-5
R106	B-20
R107	B-20
R108	A-3
R109	A-3
R110	A-20
R111	B-4
R112	B-19
R114	B-19
R117	B-19
R118	B-19
R119	C-18
R120	B-4
R122	C-18
R123	C-18
R124	B-3
R126	C-3
R127	C-3
R128	B-3
R129	C-19
R130	C-19
R131	C-19
R132	C-19
R133	C-3
R134	C-19
R135	C-19
R136	C-4
R137	C-5
R138	C-4
R139	C-3
R140	C-3
R141	C-19
R142	C-4
R143	C-18
R144	C-3
R146	C-4
R147	C-18
R148	C-4
R149	C-4
R150	B-3
R151	C-4
R152	C-4
R153	B-5
R154	D-4
R155	D-3
R156	C-19
R157	D-20
R158	D-5
R159	D-4
R160	C-5
R161	D-20
R162	C-5
R163	D-4
R164	C-18
R165	C-5
R166	D-3
R167	C-20
R168	C-20
R169	C-19
R171	D-19
R173	D-4
R174	D-4
R175	D-4
R178	C-3
R179	A-3
R180	A-5
R181	A-5
R182	D-20
R185	B-18
R186	B-20
R187	B-20
R188	C-19
R189	C-19
R190	C-20
R191	C-20
R193	B-4
R194	B-4
R195	B-4
R196	B-5
R201	C-15
R202	B-7
R203	B-8
R206	C-14
R207	B-10
R208	C-14
R209	C-14
R210	C-9
R211	B-9
R213	C-8
R214	C-9
R215	B-9
R216	C-15
R217	C-7
R218	B-10
R219	C-8
R224	B-17
R226	B-9
R228	C-8
R229	C-8
R230	B-9
R231	C-9
R232	C-8
R234	A-10
R235	B-14
R245	A-13
R246	D-17
R247	D-17
R253	B-8
R254	C-16
R255	B-15
R256	B-15
R259	B-15
R261	B-15
R262	C-15
R263	B-8
R264	B-16
R265	C-16
R266	B-8
R269	B-9
R270	A-9
R271	D-4
R272	C-15
R273	C-8
R274	B-17
R279	C-17
R280	A-8
R282	A-8
R283	A-8
R284	B-6
R285	C-16
R286	A-16
R287	C-6
R288	C-17
R289	C-17
R291	B-7
R292	C-7
R293	C-9
R296	B-7
R297	B-16
R300	B-16
R302	B-7
R303	B-17
R304	B-7
R305	B-16
R307	B-16
R308	C-6
R309	C-6
R311	A-15
R312	C-6
R313	C-6
R314	A-16
R315	C-7
R316	A-16
R317	B-16
R318	B-7
R319	B-16
R320	C-16
R321	B-16
R322	C-7
R323	C-9
R324	C-7
R325	C-7
R327	C-16
R328	A-16
R329	B-7
R330	B-6
R331	B-7
R332	C-8
R334	A-16
R338	A-7
R339	B-8
R343	C-16
R346	C-16
R347	B-8
R350	B-17
R351	C-17
R354	A-7
R355	B-7
R356	C-6
R357	B-7
R358	B-7
R359	C-6
R360	C-6
R361	B-7
R362	C-7
R363	B-7
R365	C-7
R366	C-7
R368	B-8
R373	C-8
R375	B-16
R380	B-17
R381	B-17
R383	B-8
R387	B-14
R390	A-16
R391	A-14
R395	D-8
R398	A-8
R399	A-8
R501	F-2
R503	G-5
R505	G-1
R506	G-1
R507	G-3
R508	F-20
R509	G-2
R510	G-2
R511	G-5
R512	G-5
R513	G-19
R514	G-19
R515	F-2
R516	F-19
R517	F-3
R518	F-18
R519	E-2
R520	F-3
R521	E-1
R522	C-2
R523	C-1
R524	E-1
R525	F-18
R526	F-18
R527	F-20
R528	F-1
R530	B-3
R531	F-3
R532	D-4
R534	B-21
R535	B-20
R536	B-20
R537	F-18
R538	G-3
R539	F-18
R540	F-18
R541	F-20
R542	F-20
R543	B-3
R544	F-20
R545	B-3
R546	B-2
R547	B-3
R548	E-3
R549	E-19
R551	C-1
R552	G-5
R553	G-4
R554	C-2
R555	C-2
R556	F-19
R557	C-1
R558	G-5
R561	F-5
R562	F-5
R563	F-5
R564	B-1
R566	B-1
R567	G-2
R569	F-3
R570	F-19
R572	E-5
R573	D-4
R575	E-19
R577	F-20
R578	F-3
R579	G-3
R580	G-5
R581	F-2
R582	F-5
R584	G-5
R585	F-20
R586	G-2
R587	G-2
R588	E-1
R589	G-19
R590	F-19
R591	E-4
R592	D-4
R595	F-3
R596	E-4
R597	E-3
R599	B-21
R954	D-1
R955	D-2
R956	D-2
R957	D-1
R961	C-14
R962	E-5
R964	E-5
R965	E-5
R966	E-4
R967	D-4
R968	D-4
R969	D-5
R972	E-5
R1251	C-10
R1252	C-10
R1259	C-11
R1260	C-11
R1265	C-13
R1266	C-13
R1267	C-13
R1268	B-13
R1270	C-10
R1275	C-14
R1279	C-13
R1280	C-13
R1281	C-9
R1282	D-10
R1284	B-14
R1285	B-10
R1286	B-13
R1287	B-13
R1400	E-5
R1401	G-19
R1403	G-1
R1404	F-2
R1405	G-20
R1406	G-4
R1407	G-20
R1409	C-21
R1410	C-2
R1411	E-3
R1412	E-3
R1413	E-3
R2011	G-2
R2012	G-2
R2013	G-3
R2014	G-3
R2015	E-21
R2016	E-21
R2017	F-20
R2018	F-20
R2019	F-2
R2020	F-2
R2021	G-2
R2022	F-2
R2023	F-2
R2024	F-2
R2025	F-2
R2026	F-2
R2027	F-20
R2028	F-20
R2029	F-2
R2030	F-2
R2031	F-2
R2032	F-2
R2033	F-2
R2034	F-2
R2035	E-21
R2036	E-21
R2037	F-2
R2038	E-2
R2039	E-21
R2040	E-21
R2041	F-2
R2042	F-2
R2043	G-1
R2044	G-1
R2045	G-22
R2046	G-22
R2047	G-2
R2048	G-2
R2049	G-2
R2050	G-2
R2051	F-1
R2052	F-2
R2053	F-3
R2054	F-3
R2055	G-20
R2056	F-20
R2057	E-3
R2058	F-3
R2059	F-3
R2060	E-3
R2061	F-3
R2062	F-3
R2063	F-3
R2064	F-3
R2065	F-3
R2066	F-3
R2067	F-3
R2068	F-3
R2069	F-3
R2070	E-3
R2071	F-3
R2072	F-3
R2073	F-19
R2074	F-19
R2075	F-19
R2076	F-19
R2077	E-4
R2078	E-4
R2079	D-4
R2080	D-4
R2081	E-5
R2082	E-5
R2083	F-5
R2084	F-5
R2085	F-5
R2086	F-5
R2087	G-18
R2088	G-18
R2089	G-5
R2090	G-5
R2091	F-5
R2092	G-5
R2093	G-4
R2094	G-4
R2095	G-4
R2096	G-4
R2097	D-2
R2098	C-2
R2099	C-1
R2100	C-2
R2101	C-2
R2102	D-2
R2103	F-19
R2104	F-19
X201	A-15
X501	G-3
X502	E-4
XTL501	F-20

VS-126 (REC/PB HEAD AMPLIFIER) SCHEMATIC DIAGRAM

< >: The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.



VS-126 BOARD (1/5)
(RP BLOCK)
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
CN102 6P 1.5MM PITCH
REC 1
RP GND
RF SWP
PB RF
PB PCM RF
PB 'CH RF
CHECK PIN
TO VS-126 BOARD (5/5)
<See Page 4-36>
2CH DUMP CONT
1CH DUMP CONT
MT Q
MT FO
MT 2CH
MT 1CH
REC Y
REC LOW CONT
REC C VR
RP SHIELD
CN101 13P 0.8MM NONZIF ELCO
1CH A
2CH B
FLYING ERASE
IC102
VIDEO HEAD AMP
IC102 CXA1704R
Q133, 132 PB RF AMP
Q105 MUTE SWITCH
Q106 TIME CONSTANT SWITCH
Q109, 114 BUFFER
Q116 PB.RF.EQ
Q118 BUFFER
Q121, 124 PB RF PEAK
Q125, 136 CUT-OFF FREQUENCY SWITCH
Q111 FREQUENCY CHARACTER SWITCH
Q126 BUFFER
Q127 GAIN SWITCH
Q129 SWITCH
Q134, 135 REC/PB SWITCH
Q131 CUT-OFF FREQ SW
Q113, 115 REC.EQ
FE BLOCK
Q104 SWITCH
Q102 ERASE CURRENT SWITCH
Q101, 103 ERASE OSC

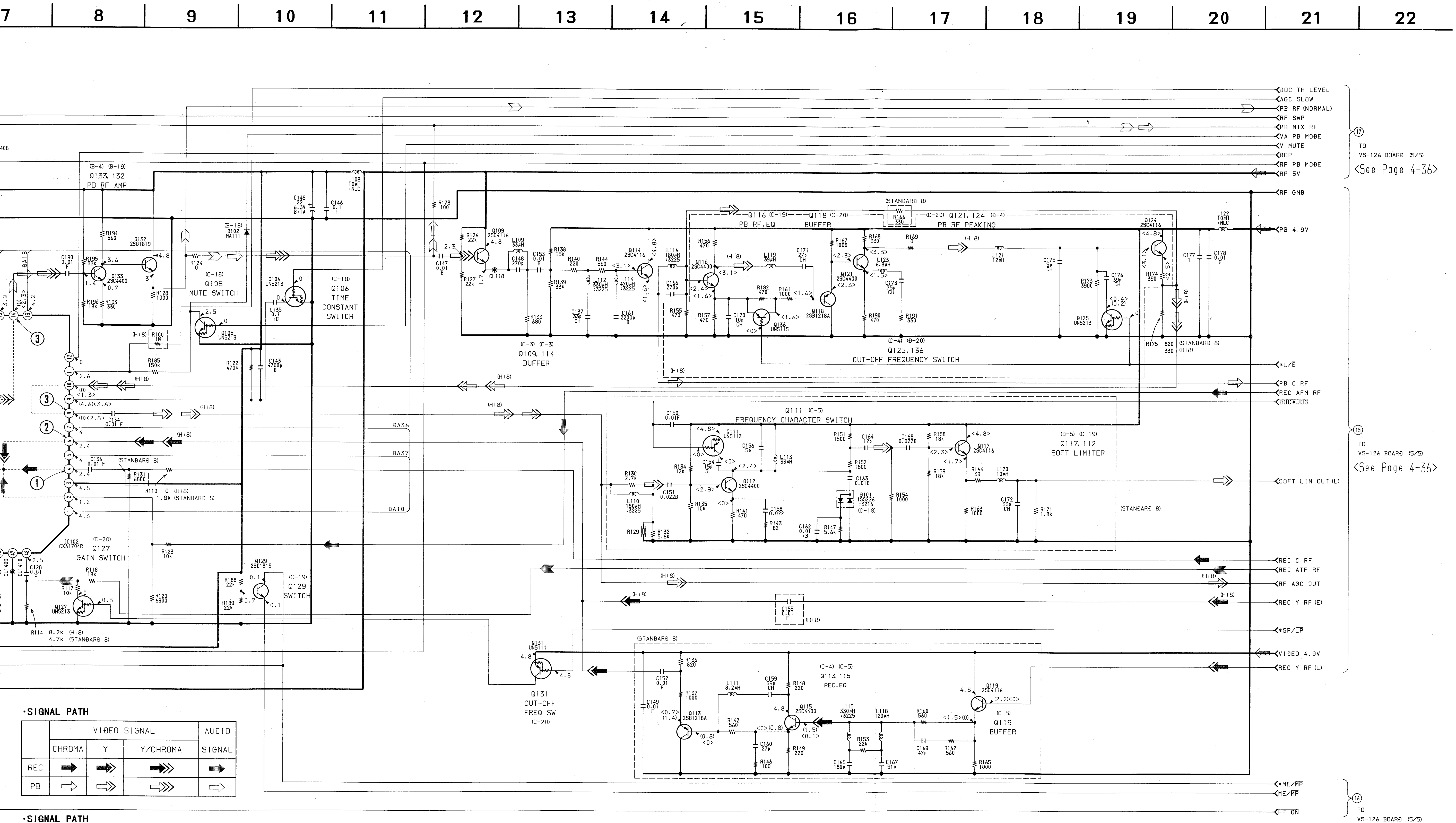
•SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡≫	➡⇨≫	➡
PB	⇨	⇨≫	⇨⇨≫	⇨

•SIGNAL PATH

	REC	REC/PB	PB
Ref. signal	➡		⇨

< >: The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.


7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
DOC TH LEVEL
AGC SLOW
PB RF (NORMAL)
RF SWP
PB MIX RF
VA PB MODE
V MUTE
DOP
RP PB MODE
RP 5V
⑰ TO VS-126 BOARD (5/5) <See Page 4-36>
RP GND
PB 4.9V
*L/E
PB C RF
REC AFM RF
DOC*JOG
⑮ TO VS-126 BOARD (5/5) <See Page 4-36>
SOFT LIM OUT (L)
REC C RF
REC ATF RF
RF AGC OUT
REC Y RF (E)
*SP/LP
VIDEO 4.9V
REC Y RF (L)
*ME/MP
ME/MP
FE ON
⑯ TO VS-126 BOARD (5/5) <See Page 4-36>
(B-4) (B-19) Q133, 132 PB RF AMP
(C-18) Q105 MUTE SWITCH
(C-18) Q106 TIME CONSTANT SWITCH
Q116 (C-19) Q118 (C-20) PB.RF.EQ BUFFER
(C-20) Q121, 124 (B-4) PB RF PEAKING
(C-3) (C-3) Q109, 114 BUFFER
(C-4) (B-20) Q125, 136 CUT-OFF FREQUENCY SWITCH
Q111 (C-5) FREQUENCY CHARACTER SWITCH
(B-5) (C-19) Q117, 112 SOFT LIMITER
IC102 CXA1704R (C-20) Q127 GAIN SWITCH
(C-19) Q129 SWITCH
Q131 CUT-OFF FREQ SW (C-20)
(C-4) (C-5) Q113, 115 REC.EQ
(C-5) Q119 BUFFER
(STANDARD 8)
(Hi8)
R119 0 (Hi8) 1.8k (STANDARD 8)
R114 8.2k (Hi8) 4.7k (STANDARD 8)
R175 820 (STANDARD 8) 330 (Hi8)
DA36
DA37
DA10

Hi8: CCD-TRV60E/TRV70E, FV 876
STANDARD 8: CCD-TRV30E/TRV40E/TRV50E, FV 836

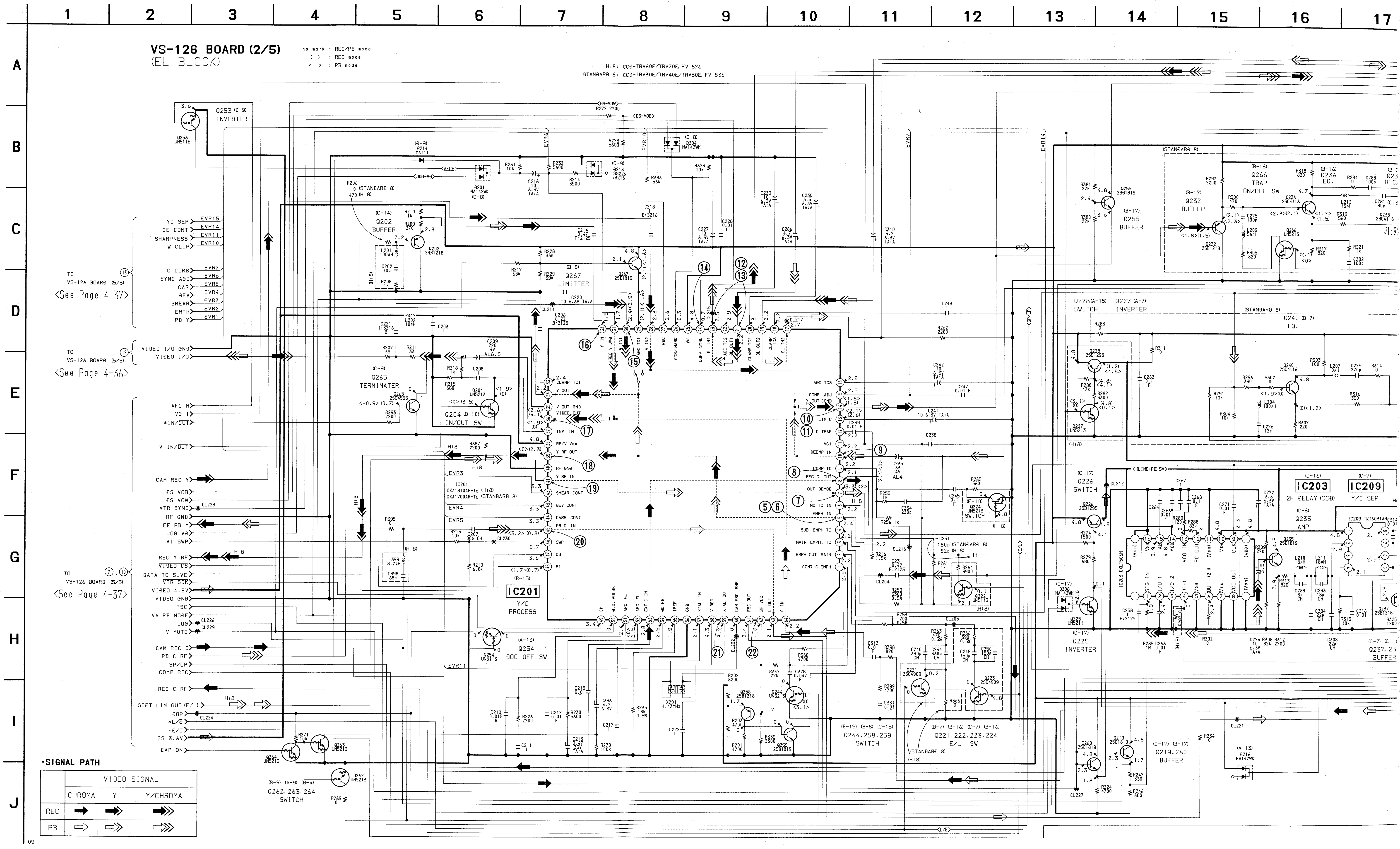
·SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡➡	➡➡➡	➡
PB	⇨	⇨⇨	⇨⇨⇨	⇨

·SIGNAL PATH

	REC	REC/PB	PB
Ref. signal	➡		▷

< >: The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.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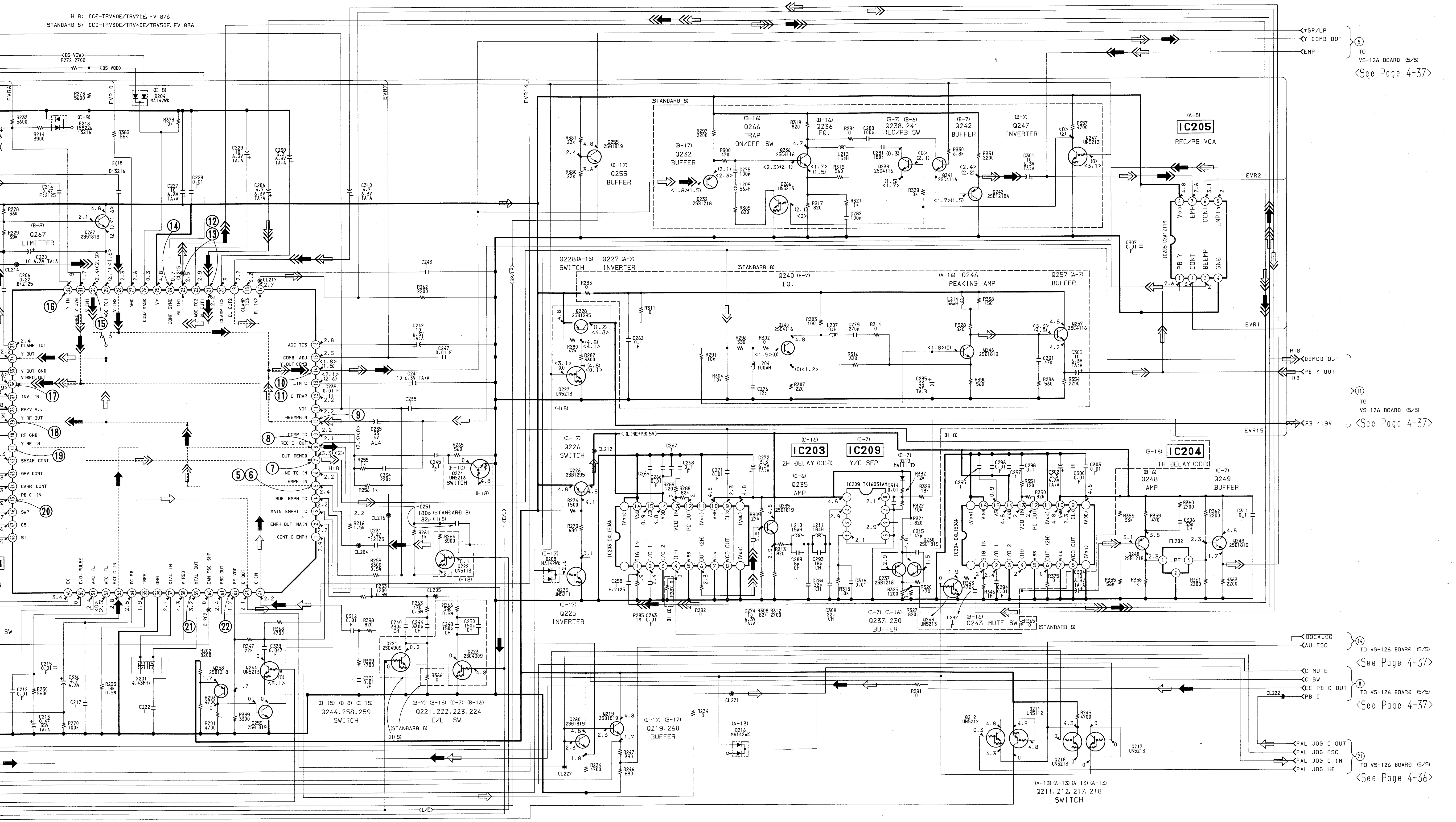
J
VS-126 BOARD (2/5)
(EL BLOCK)
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
Hi8: CCD-TRV60E/TRV70E, FV 876
STANDARD 8: CCD-TRV30E/TRV40E/TRV50E, FV 836
Q253 (B-9) INVERTER
TO VS-126 BOARD ⑬ (5/5) <See Page 4-37>
TO VS-126 BOARD ⑲ (5/5) <See Page 4-36>
TO VS-126 BOARD ⑦.⑩ (5/5) <See Page 4-37>
YC SEP
CE CONT
SHARPNESS
W CLIP
C COMB
SYNC AGC
CAR
DEV
SMEAR
EMPH
PB Y
VIDEO I/O GND
VIDEO I/O
AFC H
VG I
*IN/OUT
V IN/OUT
CAM REC Y
DS VOB
DS VOW
VTR SYNC
RF GND
EE PB Y
JOG VD
VI SWP
REC Y RF
VIDEO CS
DATA TO SLVE
VTR SCK
VIDEO 4.9V
VIDEO GND
FSC
VA PB MODE
JOG
V MUTE
CAM REC C
PB C RF
SP/LP
COMP REC
REC C RF
SOFT LIM OUT (E/L)
DOP
*L/E
*E/C
SS 3.6V
CAP ON
(C-14) Q202 BUFFER
(C-9) Q265 TERMINATER
Q204 (B-10) IN/OUT SW
(B-8) Q267 LIMITTER
IC201 CXA1810AR-T6 (Hi8) CXA1700AR-T6 (STANDARD 8)
IC201 Y/C PROCESS
(A-13) Q254 DOC OFF SW
X201 4.43MHz
(B-9) (A-9) (B-4) Q262, 263, 264 SWITCH
(B-15) (B-8) (C-15) Q244.258.259 SWITCH
(B-7) (B-16) (C-7) (B-16) Q221.222.223.224 E/L SW
Q228(A-15) SWITCH
Q227 (A-7) INVERTER
Q240 (B-7) EQ.
(C-17) Q226 SWITCH
(C-17) Q225 INVERTER
(C-17) (B-17) Q219.260 BUFFER
(B-16) Q266 TRAP ON/OFF SW
(B-16) Q236 EQ.
(B-17) Q232 BUFFER
(B-17) Q255 BUFFER
(C-16) IC203 2H DELAY (CCD)
(C-7) IC209 Y/C SEP
(C-6) Q235 AMP
(C-7) Q237, 23 BUFFER
IC203 CXL1506N
(STANDARD 8)
CLAMP TC1
Y OUT
V OUT GND
VIDEO OUT
INV IN
RF/V Vcc
Y RF OUT
RF GND
Y RF IN
SMEAR CONT
DEV CONT
CARR CONT
PB C IN
SWP
CS
SI
Y IN
AGC TC1
V IN2
WDC
DDS/MASK
Vcc
COMP SYNC
BL IN1
AGC TC2
BL OUT1
CLAMP TC2
BL OUT2
CLAMP TC3
BL IN2
AGC TC3
COMB ADJ
Y OUT COMB
LIM C
C TRAP
VG1
DEEMPHIN
COMP TC
REC C OUT
OUT DEMOD
NC TC IN
EMPH IN
SUB EMPH TC
MAIN EMPH TC
EMPH OUT MAIN
CONT C EMPH
CK
D.O. PULSE
APC FL
AFC FL
EXT C IN
DC FB
IREF
GND
XTAL IN
V REG
XTAL OUT
CAM FSC
SHP
FSC OUT
BF VOC
C OUT
C IN
·SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	⮆	⮆
PB	⇨	⇨	⇨

< >: The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.

7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23

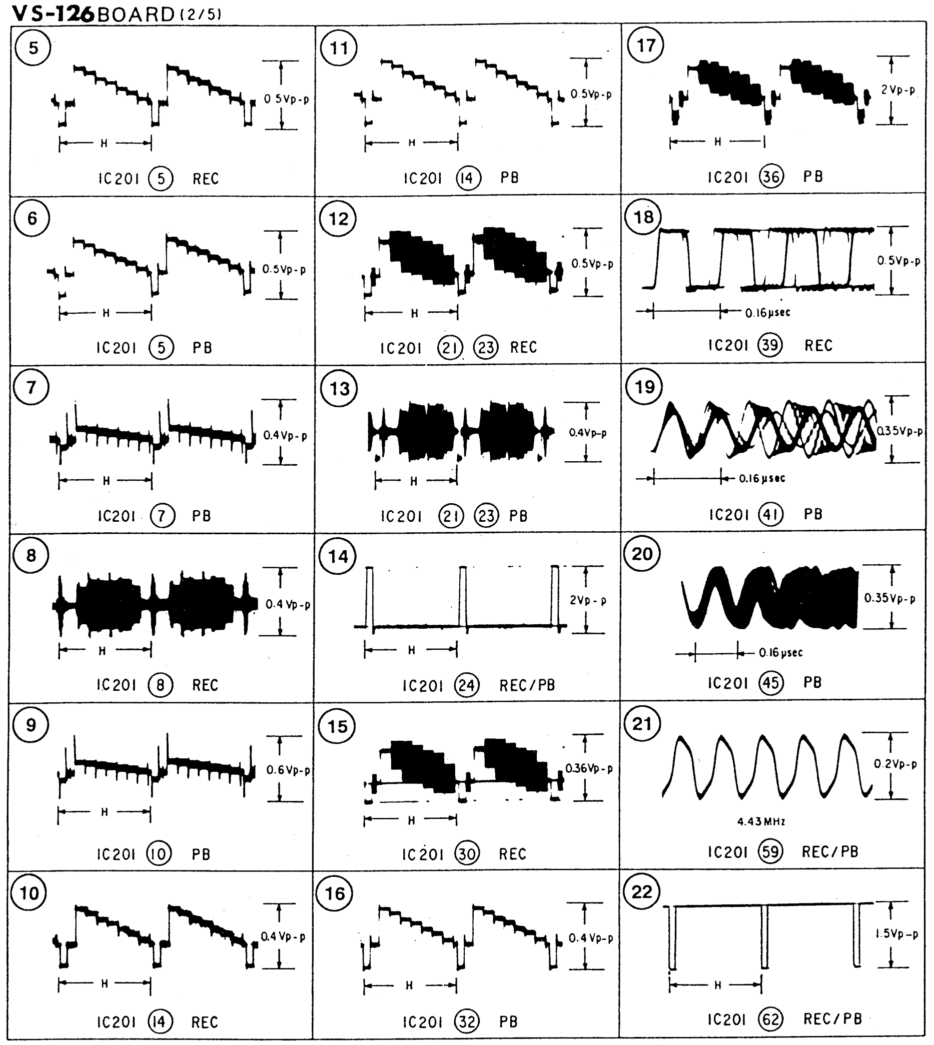


Hi8: CCD-TRV60E/TRV70E, FV 876
STANDARD 8: CCD-TRV30E/TRV40E/TRV50E, FV 836
Q267 LIMITTER
Q228 SWITCH
Q227 INVERTER
Q240 EQ.
Q246 PEAKING AMP
Q257 BUFFER
Q232 BUFFER
Q255 BUFFER
Q266 TRAP ON/OFF SW
Q236 EQ.
Q238, 241 REC/PB SW
Q242 BUFFER
Q247 INVERTER
IC205 REC/PB VCA
IC205 CXA1211M
Q226 SWITCH
Q225 INVERTER
IC203 2H DELAY (CCD)
IC209 Y/C SEP
Q235 AMP
IC204 1H DELAY (CCD)
Q248 AMP
Q249 BUFFER
Q237, 230 BUFFER
Q243 MUTE SW
Q244, 258, 259 SWITCH
Q221, 222, 223, 224 E/L SW
Q219, 260 BUFFER
Q211, 212, 217, 218 SWITCH
(STANDARD 8)
(Hi8)
*SP/LP
Y COMB OUT
EMP
TO VS-126 BOARD (5/5)
<See Page 4-37>
DEMOD OUT
PB Y OUT
PB 4.9V
EVR1
EVR2
EVR15
DOC*JOG
AU FSC
C MUTE
C SW
EE PB C OUT
PB C
PAL JOG C OUT
PAL JOG FSC
PAL JOG C IN
PAL JOG HD
<See Page 4-36>

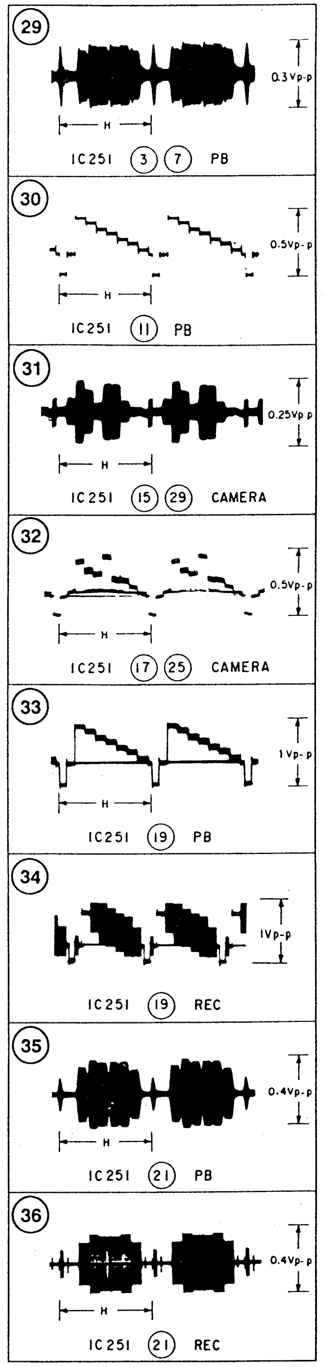
VS-126 (Hi 8 I/O, ELECTRIC VOLUME) SCHEMATIC DIAGRAM • Refer to page 4-18 for Printed Wiring Board.

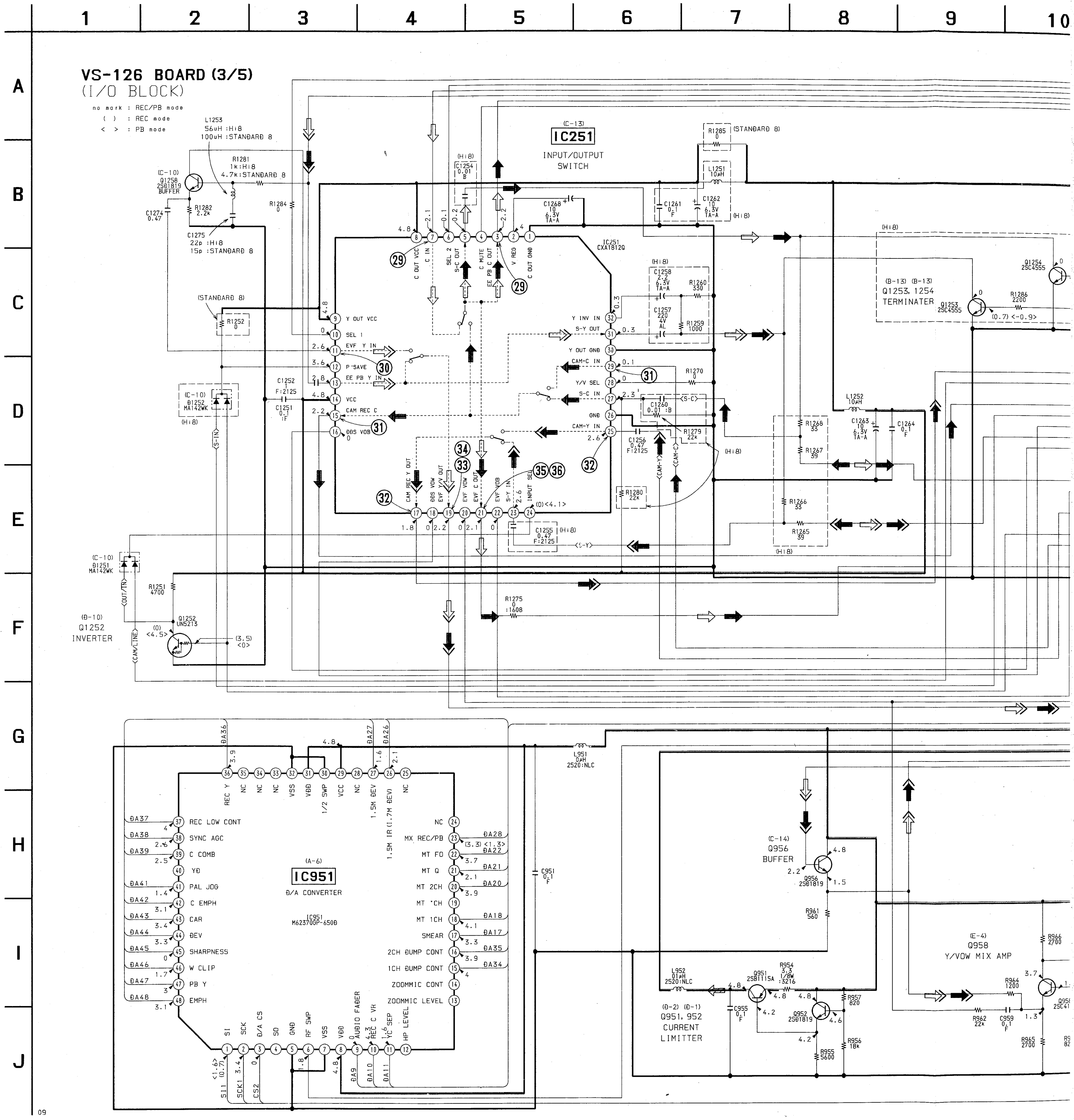
< >: The pages
SUPPLEM

VS-126 BOARD (2/5)



VS-126 BOARD (3/5)

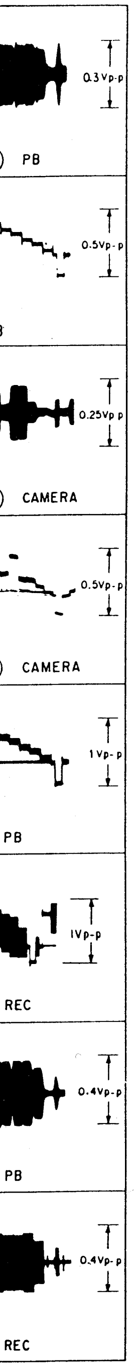


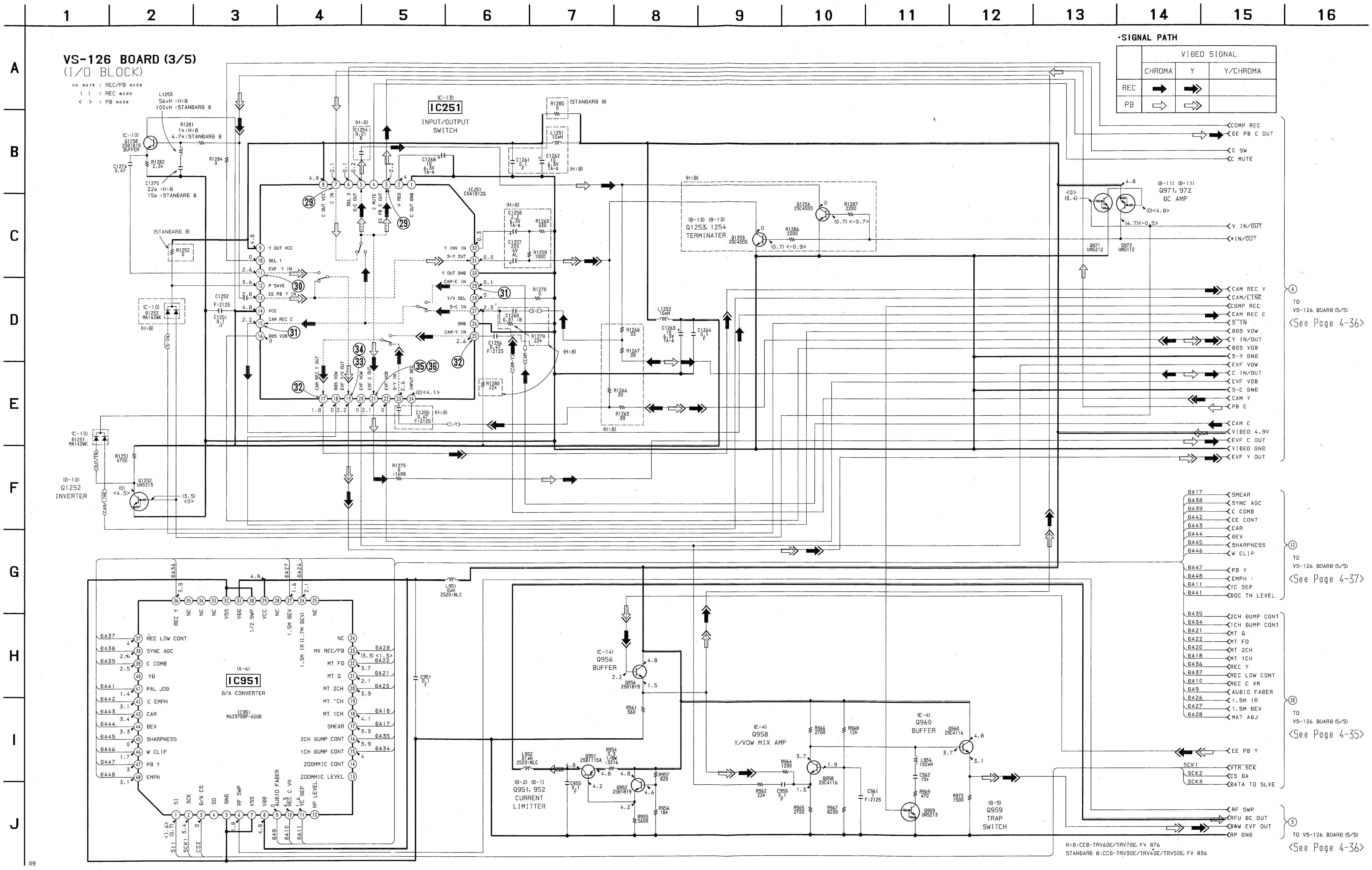

1 2 3 4 5 6 7 8 9 10
A B C D E F G H I J
VS-126 BOARD (3/5)
(I/O BLOCK)
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
IC251 INPUT/OUTPUT SWITCH
IC251 CXA1812Q
Y OUT VCC
SEL 1
EVF Y IN
P-SAVE
EE PB Y IN
VCC
CAM REC C
BBS VDB
Y INV IN
S-Y OUT
Y OUT GND
CAM-C IN
Y/V SEL
S-C IN
GND
CAM-Y IN
L1253 56uH :Hi8 100uH :STANDARD 8
R1281 1k:Hi8 4.7k:STANDARD 8
C1275 22p :Hi8 15p :STANDARD 8
Q1250 2SB1819 BUFFER
Q1251 MA142WK
Q1252 UN5213 INVERTER
(B-10) Q1252 INVERTER
(B-13) Q1253, 1254 TERMINATER
Q1253 2SC4555
Q1254 2SC4555
L1251 10uH
L1252 10uH
R1285 0 (STANDARD 8)
IC951 D/A CONVERTER
IC951 M62370GP-650B
REC LOW CONT
SYNC AGC
C COMB
YD
PAL JOG
C EMPH
CAR
DEV
SHARPNESS
W CLIP
PB Y
EMPH
NC
MX REC/PB
MT FO
MT Q
MT 2CH
MT 1CH
SMEAR
2CH DUMP CONT
1CH DUMP CONT
ZOOMMIC CONT
ZOOMMIC LEVEL
SI
SCK
D/A CS
SO
GND
RF SWP
VSS
VDD
AUDIO FADER
REC C VH
YC SEP
HP LEVEL
REC Y
1/2 SWP
VCC
1.5M DEV
1.5M IR(1.7M DEV)
DA36 DA37 DA38 DA39 DA41 DA42 DA43 DA44 DA45 DA46 DA47 DA48
DA28 DA22 DA21 DA20 DA18 DA17 DA35 DA34 DA27 DA26 DA9 DA10 DA11
SI1 SCK1 CS2
(C-14) Q956 BUFFER
Q956 2SB1819
Q951, 952 CURRENT LIMITTER
Q951 2SB1115A
Q952 2SB1819
L951 2520:NLC
L952 2520:NLC
(E-4) Q958 Y/VDW MIX AMP
09

VS-126 (Hi8 I/O, ELECTRIC VOLUME) SCHEMATIC DIAGRAM

- Refer to page 4–18 for Printed Wiring Board.

< > : The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.





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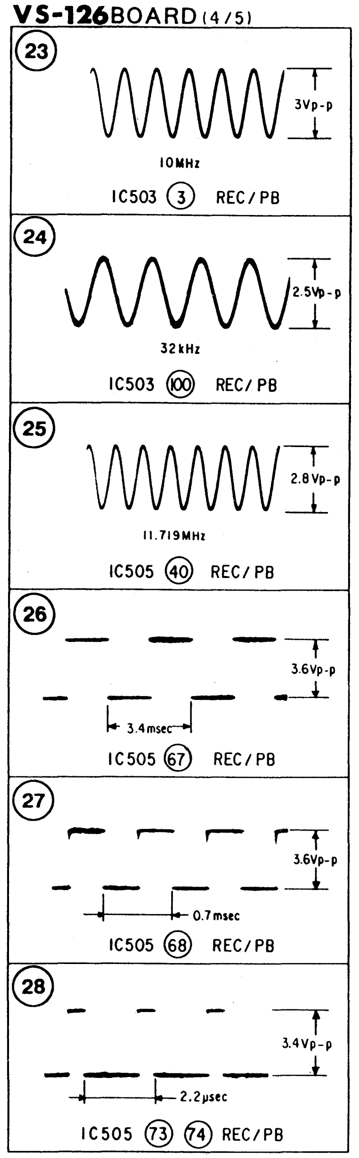
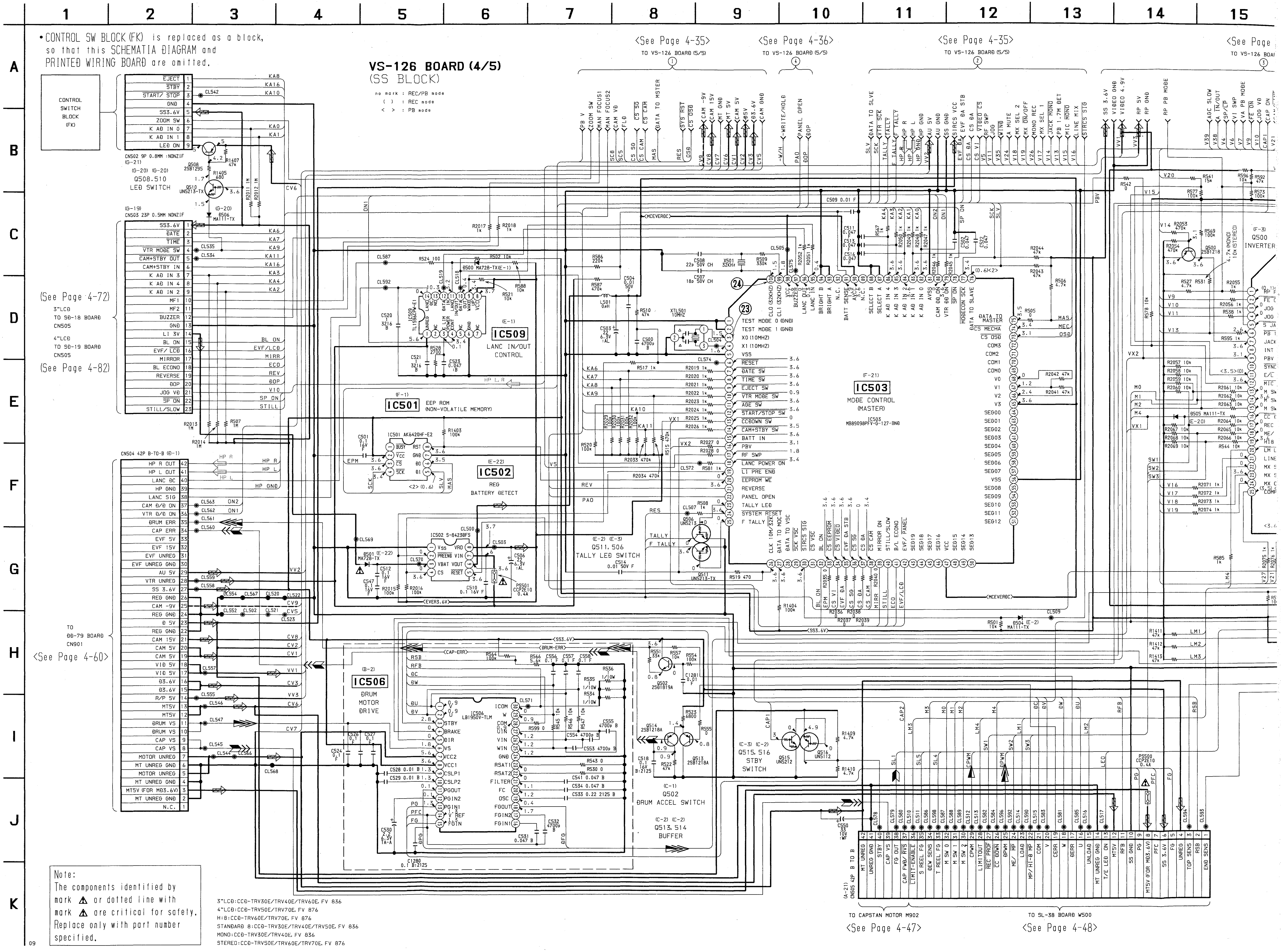
VS-126 BOARD (3/5)
(I/O BLOCK)
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
·SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
REC
PB
(C-13)
IC251
INPUT/OUTPUT SWITCH
IC251 CXA1812Q
(C-10) Q1258 2SD1819 BUFFER
(C-10) Q1252 MA142WK
(B-13) (B-13) Q1253, 1254 TERMINATER
(B-11) (B-11) Q971, 972 DC AMP
(D-10) Q1252 INVERTER
(A-6) IC951 D/A CONVERTER
IC951 M62370BP-6500
(C-14) Q956 BUFFER
(E-4) Q958 Y/VDW MIX AMP
(E-4) Q960 BUFFER
(B-2) (D-1) Q951, 952 CURRENT LIMITTER
(D-5) Q959 TRAP SWITCH
COMP REC
EE PB C OUT
C SW
C MUTE
V IN/OUT
*IN/OUT
CAM REC Y
CAM/LINE
COMP REC
CAM REC C
S IN
DDS VDW
Y IN/OUT
DDS VDB
S-Y GND
EVF VDW
C IN/OUT
EVF VDB
S-C GND
CAM Y
PB C
CAM C
VIDEO 4.9V
EVF C OUT
VIDEO GND
EVF Y OUT
TO VS-126 BOARD (5/5)
<See Page 4-36>
SMEAR
SYNC AGC
C COMB
CE CONT
CAR
DEV
SHARPNESS
W CLIP
PB Y
EMPH
YC SEP
DOC TH LEVEL
TO VS-126 BOARD (5/5)
<See Page 4-37>
2CH DUMP CONT
1CH DUMP CONT
MT Q
MT FO
MT 2CH
MT 1CH
REC Y
REC LOW CONT
REC C VR
AUDIO FADER
1.5M IR
1.5M DEV
MAT ADJ
TO VS-126 BOARD (5/5)
<See Page 4-35>
EE PB Y
VTR SCK
CS DA
DATA TO SLVE
RF SWP
RFU DC OUT
B&W EVF OUT
RP GND
TO VS-126 BOARD (5/5)
<See Page 4-36>
Hi8:CCD-TRV60E/TRV70E, FV 876
STANDARD 8:CCD-TRV30E/TRV40E/TRV50E, FV 836
09

VS-126 (SERVO/SYSTEM CONTROL) SCHEMATIC DIAGRAM

- Refer to page 4–18 for Printed Wiring Board.

VS-126BOARD (4/5)

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K
• CONTROL SW BLOCK (FK) is replaced as a block, so that this SCHEMATIA DIAGRAM and PRINTED WIRING BOARD are omitted.
VS-126 BOARD (4/5)
(SS BLOCK)
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
CONTROL SWITCH BLOCK (FK)
CN502 9P 0.8MM :NONZIF
CN503 23P 0.5MM NONZIF
CN504 42P B-TO-B
(See Page 4-72)
3"LCD TO SD-18 BOARD CN505
4"LCD TO SD-19 BOARD CN505
(See Page 4-82)
TO DD-79 BOARD CN901
<See Page 4-60>
<See Page 4-35> TO VS-126 BOARD (5/5) ①
<See Page 4-36> TO VS-126 BOARD (5/5) ④
<See Page 4-35> TO VS-126 BOARD (5/5) ②
<See Page TO VS-126 BOA
Q508, 510 LED SWITCH
IC509 LANC IN/OUT CONTROL
IC501 EEP ROM (NON-VOLATILE MEMORY)
IC502 REG BATTERY DETECT
IC503 MODE CONTROL (MASTER)
IC506 DRUM MOTOR DRIVE
Q511, 506 TALLY LED SWITCH
Q502 DRUM ACCEL SWITCH
Q513, 514 BUFFER
Q515, 516 STBY SWITCH
Q500 INVERTER
CN505 42P B TO B
TO CAPSTAN MOTOR M902
<See Page 4-47>
TO SL-38 BOARD W500
<See Page 4-48>

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

3"LCD:CCD-TRV30E/TRV40E/TRV60E, FV 836
4"LCD:CCD-TRV50E/TRV70E, FV 876
Hi8:CCD-TRV60E/TRV70E, FV 876
STANDARD 8:CCD-TRV30E/TRV40E/TRV50E, FV 836
MONO:CCD-TRV30E/TRV40E, FV 836
STEREO:CCD-TRV50E/TRV60E/TRV70E, FV 876

09

AGRAM

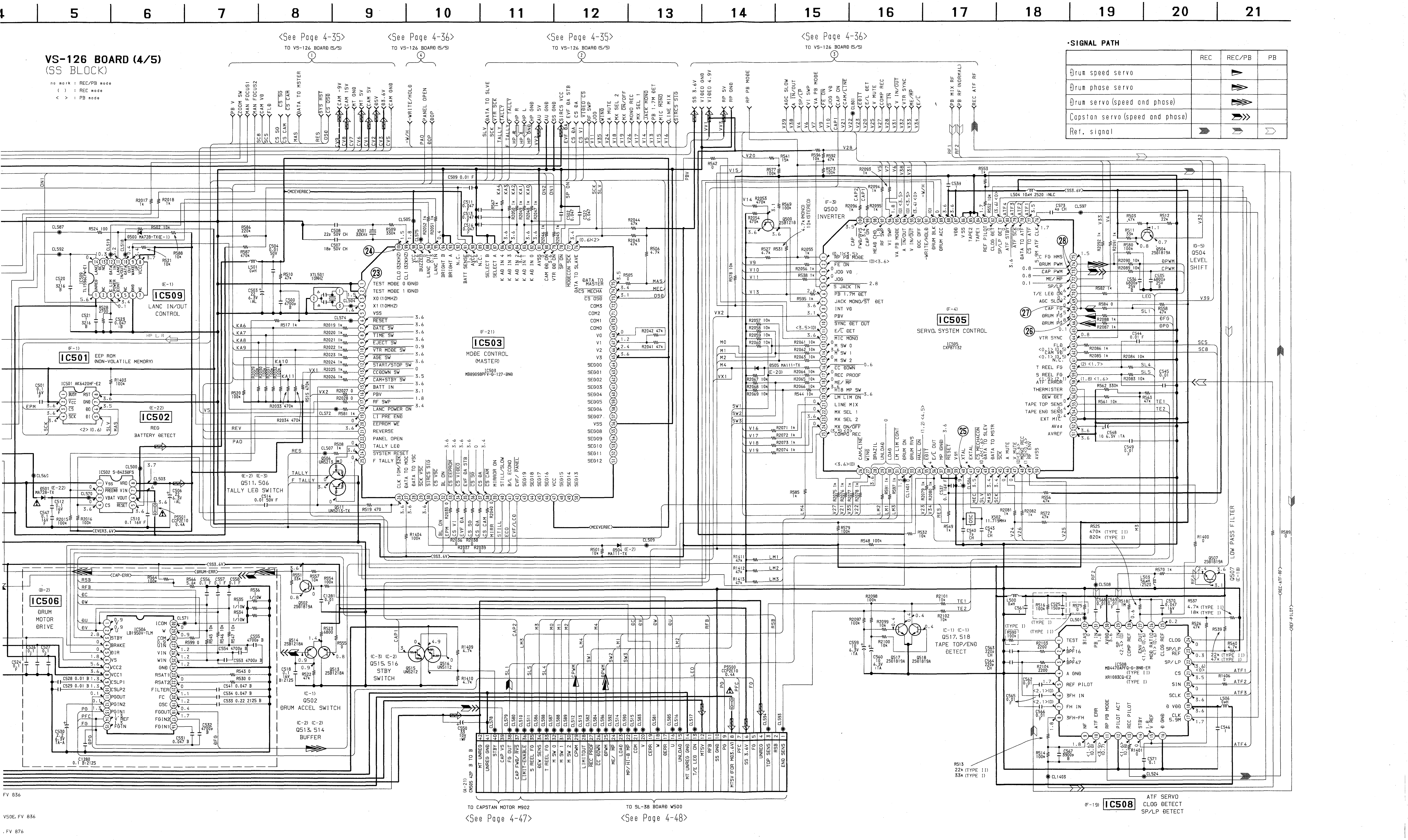
• Refer to page 4–18 for Printed Wiring Board.

< > : The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.

( ) : The pages above correspond to SERVICE MANUAL (Original).

VS-126 BOARD (4/5)
(SS BLOCK)

no mark : REC/PB mode
( ) : REC mode
< > : PB mode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<See Page 4-35> TO VS-126 BOARD (5/5) ①
<See Page 4-36> TO VS-126 BOARD (5/5) ④
<See Page 4-35> TO VS-126 BOARD (5/5) ②
<See Page 4-36> TO VS-126 BOARD (5/5) ③
IC509 LANC IN/OUT CONTROL
IC501 EEP ROM (NON-VOLATILE MEMORY)
IC502 REG BATTERY DETECT
IC503 MODE CONTROL (MASTER) MB89098PFV-G-127-BND
IC505 SERVO, SYSTEM CONTROL CXP87132
IC506 DRUM MOTOR DRIVE LB1950V-TLM
IC508 ATF SERVO CLOG DETECT SP/LP DETECT MB4470APFQ-G-BND-ER
Q500 INVERTER
Q504 LEVEL SHIFT
Q507 LOW PASS FILTER
Q511, 506 TALLY LED SWITCH
Q502 DRUM ACCEL SWITCH
Q513, 514 BUFFER
Q515, 516 STBY SWITCH
Q517, 518 TAPE TOP/END DETECT
XTL501 10MHZ
X501 32KHz
X502 11.71MHz
CN565 42P B TO B
TO CAPSTAN MOTOR M902 <See Page 4-47>
TO SL-38 BOARD W500 <See Page 4-48>
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㉗
㉘

·SIGNAL PATH

	REC	REC/PB	PB
Drum speed servo		▶	
Drum phase servo		▶▶	
Drum servo (speed and phase)		▶▶▶	
Capstan servo (speed and phase)		≫≫	
Ref. signal	▶	▷	▷

FV 836

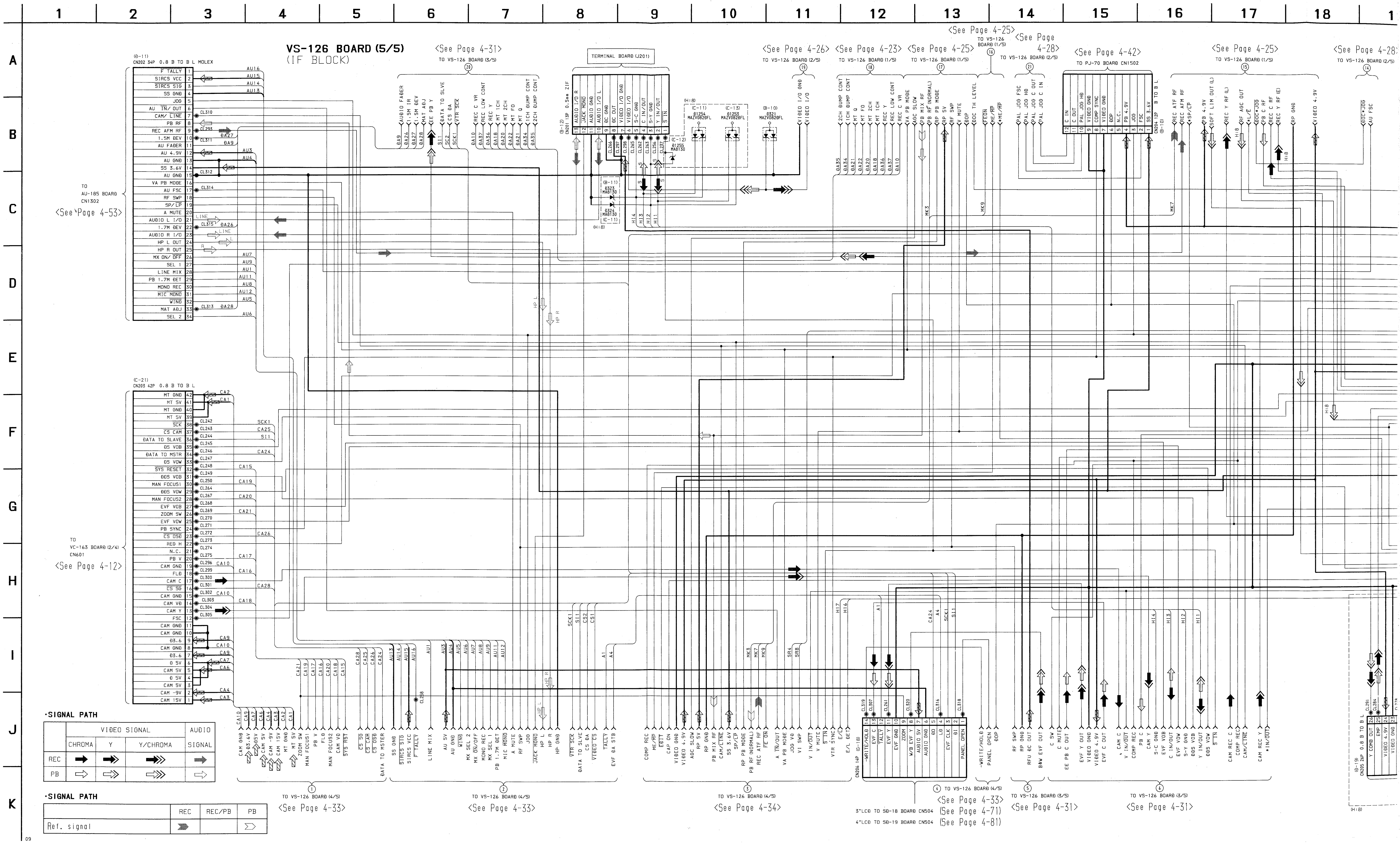
V50E.FV 836

.FV 876

< > : The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.
( ) : The pages above correspond to SERVICE MANUAL (Original).

VS-126 (SIGNAL I/O) SCHEMATIC DIAGRAM

- Refer to page 4-18 for Printed Wiring Board.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
A B C D E F G H I J K
VS-126 BOARD (5/5)
(IF BLOCK)
(D-11) CN202 34P 0.8 B TO B L MOLEX
F TALLY
SIRCS VCC
SIRCS SIG
SS GND
JOG
AU IN/OUT
CAM/LINE
PB RF
REC AFM RF
1.5M BEV
AU FADER
AU 4.9V
AU GND
SS 3.6V
AU GND
VA PB MODE
AU FSC
RF SWP
SP/LP
A MUTE
AUDIO L I/O
1.7M BEV
AUDIO R I/O
HP L OUT
HP R OUT
MX ON/OFF
SEL 1
LINE MIX
PB 1.7M BET
MONO REC
MIC MONO
WIND
MAT ADJ
SEL 2
TO AU-185 BOARD CN1302
<See Page 4-53>
(C-21) CN203 42P 0.8 B TO B L
MT GND
MT 5V
MT GND
MT 5V
SCK
CS CAM
DATA TO SLAVE
DS VDB
DATA TO MSTR
DS VDW
SYS RESET
DDS VDB
MAN FOCUS1
DDS VDW
MAN FOCUS2
EVF VDB
ZOOM SW
EVF VDW
PB SYNC
CS OSD
REG H
N.C.
PB V
CAM GND
FLD
CAM C
CS SG
CAM GND
CAM VD
CAM Y
FSC
CAM GND
CAM GND
D3.6
CAM GND
D3.6
D 5V
CAM 5V
D 5V
CAM 5V
CAM -9V
CAM 15V
TO VC-163 BOARD (2/4) CN601
<See Page 4-12>
<See Page 4-31> TO VS-126 BOARD (3/5) ⑳
TERMINAL BOARD (J201)
(B-12) CN201 13P 0.5mm ZIF
AUDIO I/O R
JACK MONO
AUDIO GND
AUDIO I/O L
BC GND
BC OUT
VIDEO I/O GND
VIDEO I/O
S-C GND
C IN/OUT
S-Y GND
Y IN/OUT
S IN
D1254 MAZV0820FL
D1253 MAZV0820FL
D321 MAZV0820FL
D323 MA8130
D324 MA8130
D1255 MA8130
<See Page 4-26> TO VS-126 BOARD (2/5) ⑲
<See Page 4-23> TO VS-126 BOARD (1/5) ⑱
<See Page 4-25> TO VS-126 BOARD (1/5) ⑰
<See Page 4-25> TO VS-126 BOARD (1/5) ⑯
<See Page 4-28> TO VS-126 BOARD (2/5) ㉑
<See Page 4-42> TO PJ-70 BOARD CN1502
CN204 12P B TO B L (B-10)
<See Page 4-25> TO VS-126 BOARD (1/5) ⑮
<See Page 4-28> TO VS-126 BOARD (2/5) ⑭
CN206 14P (G-18)
-WRITE/HOLD
EVF C
TALLY
EVF Y
EVF GND
ZOOM
W/B EVF Y
AUDIO 5V
AUDIO GND
BD
LD
EVF CLK
DI
PANEL OPEN
(D-19) CN205 26P 0.8 B TO B L
① TO VS-126 BOARD (4/5) <See Page 4-33>
② TO VS-126 BOARD (4/5) <See Page 4-33>
③ TO VS-126 BOARD (4/5) <See Page 4-34>
④ TO VS-126 BOARD (4/5) <See Page 4-33>
3"LCD TO SD-18 BOARD CN504 <See Page 4-71>
4"LCD TO SD-19 BOARD CN504 <See Page 4-81>
⑤ TO VS-126 BOARD (3/5) <See Page 4-31>
⑥ TO VS-126 BOARD (3/5) <See Page 4-31>

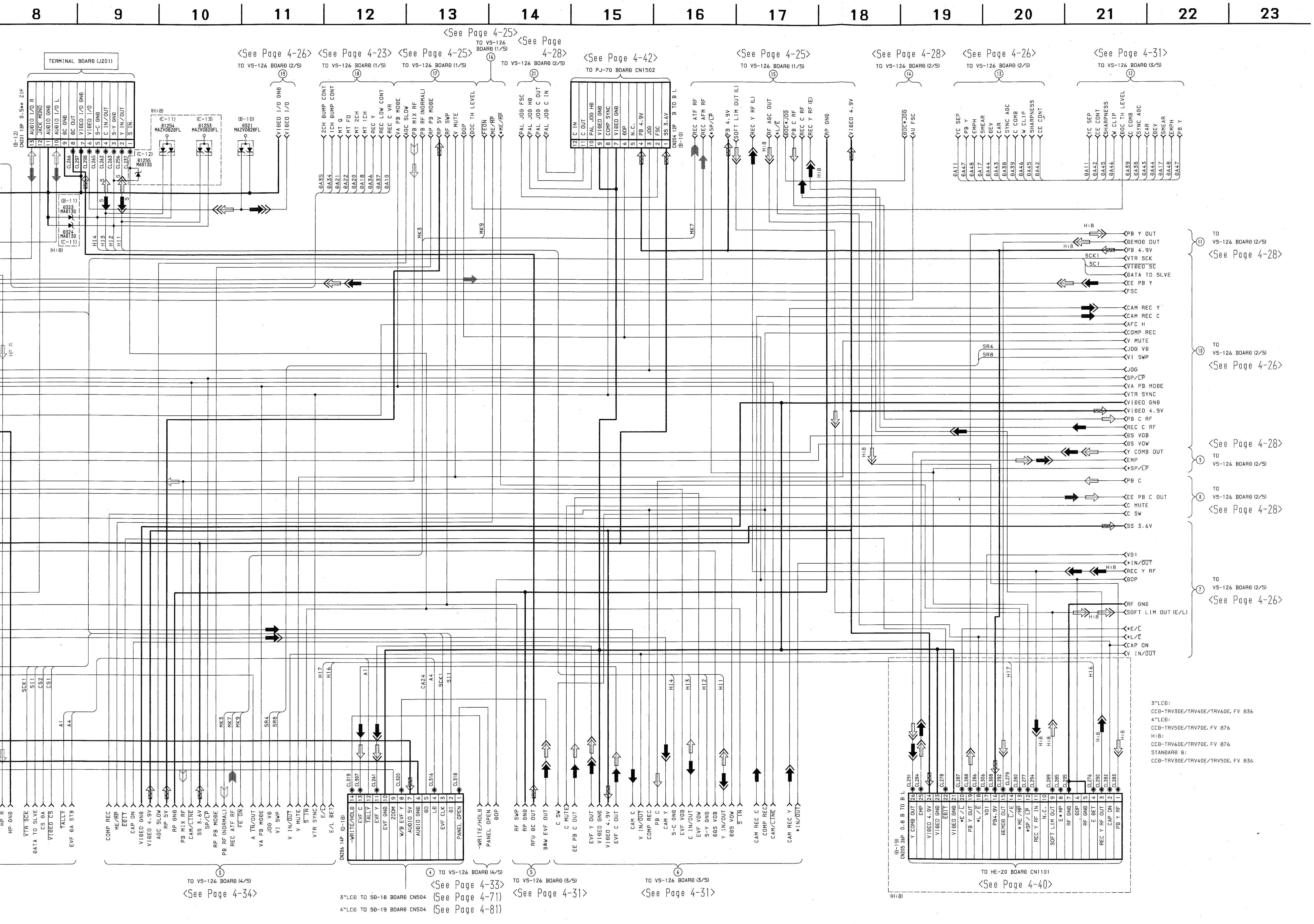
·SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡➡	➡
PB	⇨	⇨	⇨⇨	⇨

·SIGNAL PATH

	REC	REC/PB	PB
Ref. signal		➡	⇨

< >: The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.
( ): The pages above correspond to SERVICE MANUAL (Original).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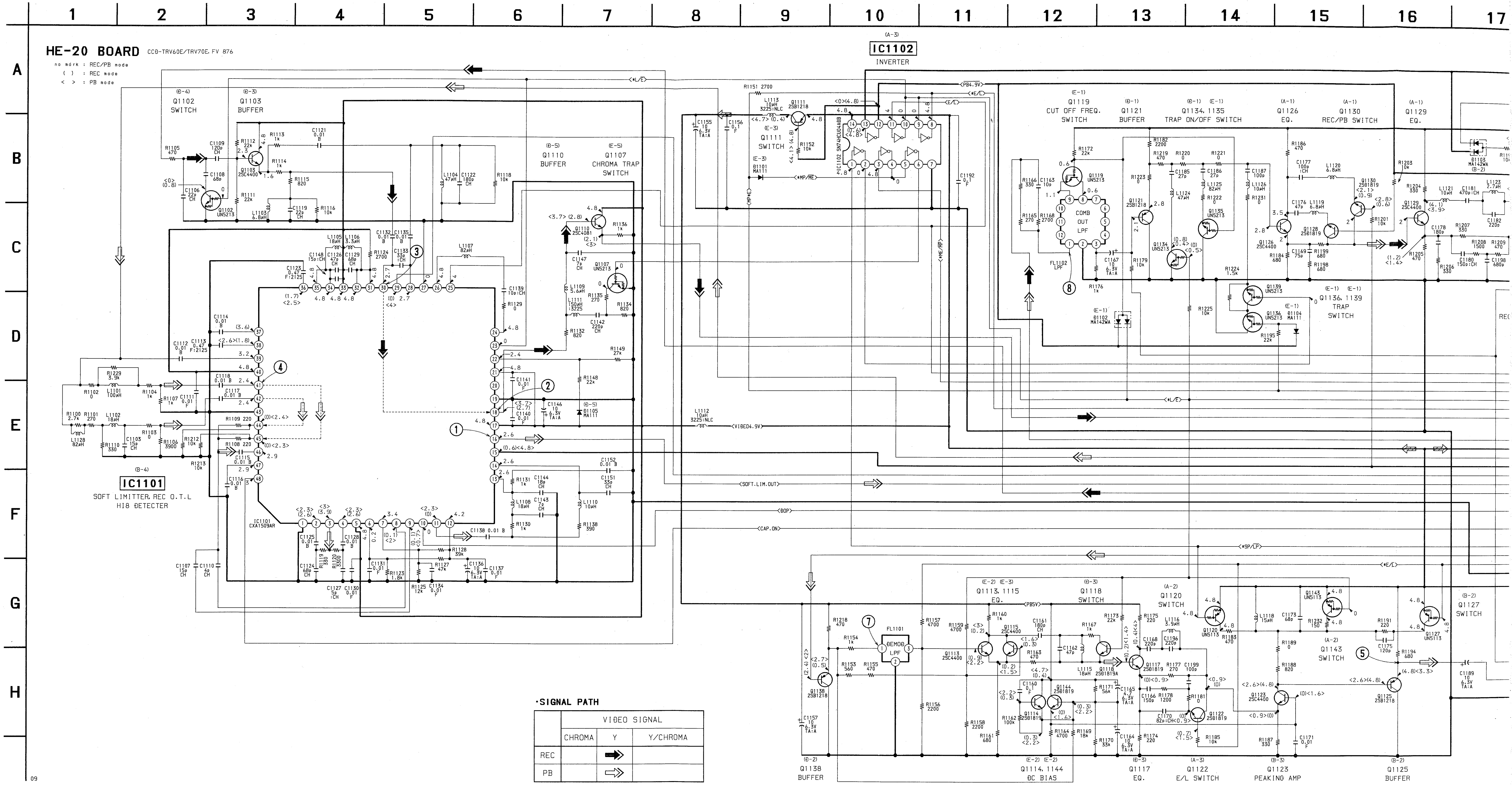
TERMINAL BOARD (J201)
CN201 13P 0.5mm ZIF
<See Page 4-26>
TO VS-126 BOARD (2/5)
<See Page 4-23>
TO VS-126 BOARD (1/5)
<See Page 4-25>
TO VS-126 BOARD (1/5)
<See Page 4-25>
TO VS-126 BOARD (1/5)
<See Page 4-28>
TO VS-126 BOARD (2/5)
<See Page 4-42>
TO PJ-70 BOARD CN1502
<See Page 4-25>
TO VS-126 BOARD (1/5)
<See Page 4-28>
TO VS-126 BOARD (2/5)
<See Page 4-26>
TO VS-126 BOARD (2/5)
<See Page 4-31>
TO VS-126 BOARD (3/5)
CN204 12P
TO VS-126 BOARD (2/5)
<See Page 4-28>
TO VS-126 BOARD (2/5)
<See Page 4-26>
<See Page 4-28>
TO VS-126 BOARD (2/5)
<See Page 4-28>
TO VS-126 BOARD (2/5)
<See Page 4-26>
CN206 14P
TO VS-126 BOARD (4/5)
<See Page 4-34>
TO VS-126 BOARD (4/5)
<See Page 4-33>
3"LCD TO SD-18 BOARD CN504 (See Page 4-71)
4"LCD TO SD-19 BOARD CN504 (See Page 4-81)
TO VS-126 BOARD (3/5)
<See Page 4-31>
TO VS-126 BOARD (3/5)
<See Page 4-31>
CN205 26P 0.8 B TO B L
TO HE-20 BOARD CN1101
<See Page 4-40>
3"LCD:
CCD-TRV30E/TRV40E/TRV60E, FV 836
4"LCD:
CCD-TRV30E/TRV70E, FV 876
Hi8:
CCD-TRV60E/TRV70E, FV 876
STANDARD 8:
CCD-TRV30E/TRV40E/TRV50E, FV 836

HE-20 (Hi8 VIDEO) SCHEMATIC DIAGRAM

< >: The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.


1
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11
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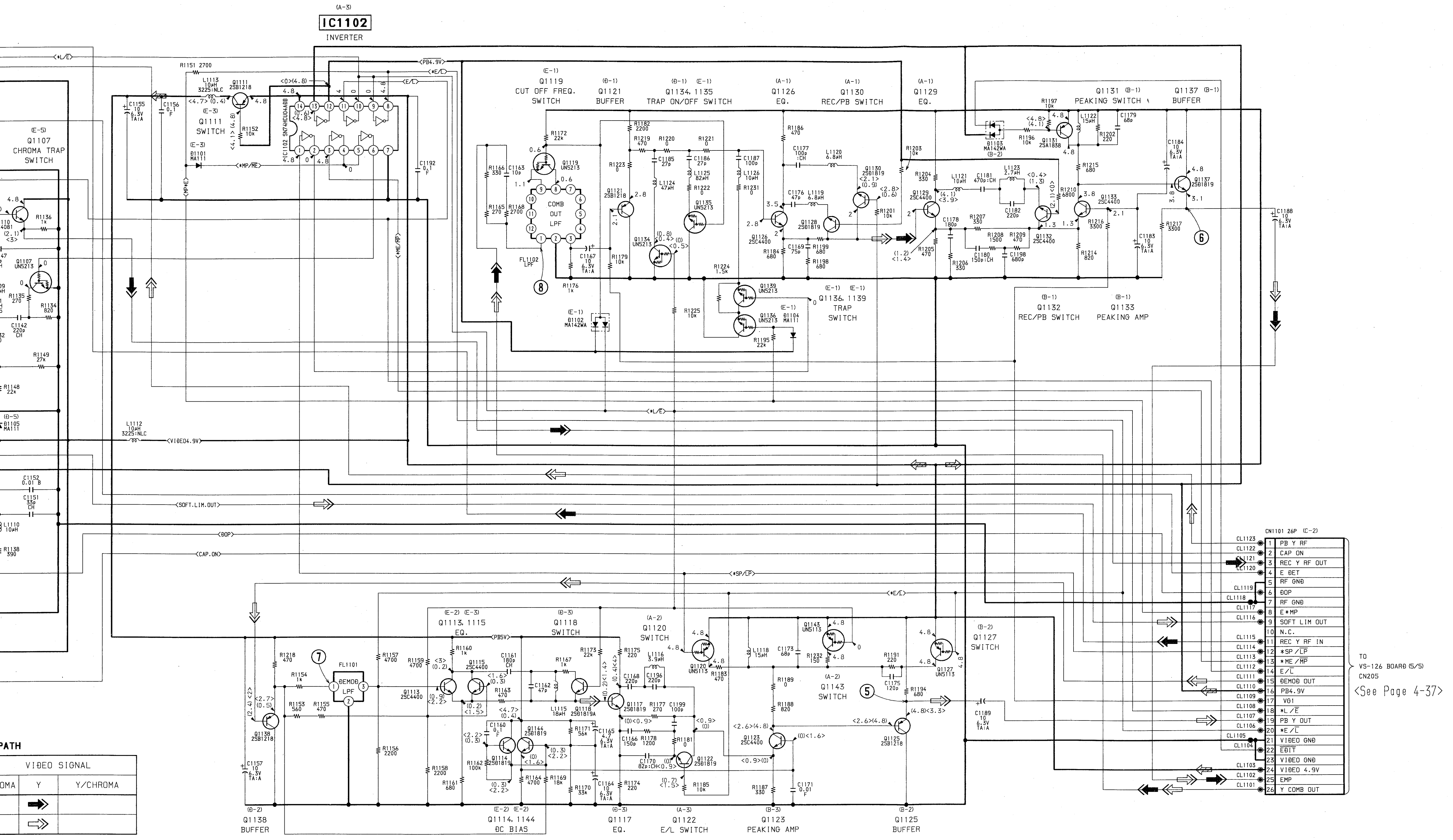
13
14
15
16
17
A
B
C
D
E
F
G
H
HE-20 BOARD CCD-TRV60E/TRV70E, FV 876
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
(B-4) Q1102 SWITCH
(B-3) Q1103 BUFFER
(B-5) Q1110 BUFFER
(E-5) Q1107 CHROMA TRAP SWITCH
(A-3) IC1102 INVERTER
(E-3) Q1111 SWITCH
(E-1) Q1119 CUT OFF FREQ. SWITCH
(B-1) Q1121 BUFFER
(B-1) (E-1) Q1134, 1135 TRAP ON/OFF SWITCH
(A-1) Q1126 EQ.
(A-1) Q1130 REC/PB SWITCH
(A-1) Q1129 EQ.
COMB OUT LPF
FL1102 LPF
(E-1) Q1136, 1139 TRAP SWITCH
(B-4) IC1101 SOFT LIMITTER, REC O.T.L HI8 DETECTER
IC1101 CXA1509AR
IC1102 SN74HCU04ABR
<VIDEO4.9V>
<SOFT.LIM.OUT>
<BOP>
<CAP.ON>
<PB4.9V>
<*E/L>
<*L/E>
<*MP/ME>
<*SP/LP>
(E-2) (E-3) Q1113, 1115 EQ.
(B-3) Q1118 SWITCH
(A-2) Q1120 SWITCH
(A-2) Q1143 SWITCH
(B-2) Q1127 SWITCH
FL1101 DEMOD LPF
(B-2) Q1138 BUFFER
(E-2) (E-2) Q1114, 1144 DC BIAS
(B-3) Q1117 EQ.
(A-3) Q1122 E/L SWITCH
(B-3) Q1123 PEAKING AMP
(B-2) Q1125 BUFFER
①
②
③
④
⑤
⑦
⑧
09

·SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC		➡	
PB		⇨	

7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

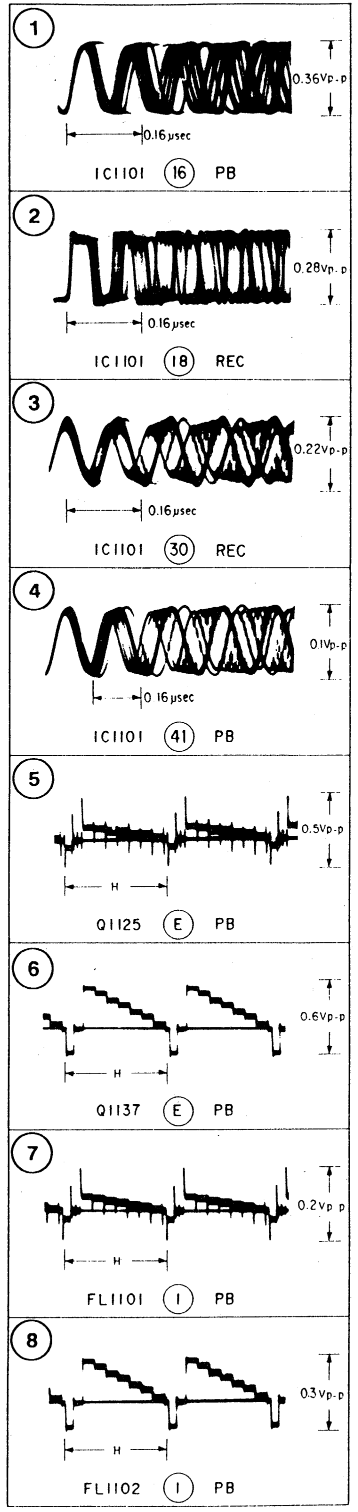


(A-3)
IC1102
INVERTER
IC1102 SN74HC04AR
Q1111 2SB1218
Q1111 SWITCH
Q1107 CHROMA TRAP SWITCH
Q1119 CUT OFF FREQ. SWITCH
Q1121 BUFFER
Q1134, 1135 TRAP ON/OFF SWITCH
Q1126 EQ.
Q1130 REC/PB SWITCH
Q1129 EQ.
Q1131 PEAKING SWITCH
Q1137 BUFFER
COMB OUT LPF
FL1102 LPF
Q1136, 1139 TRAP SWITCH
Q1132 REC/PB SWITCH
Q1133 PEAKING AMP
Q1113, 1115 EQ.
Q1118 SWITCH
Q1120 SWITCH
Q1143 SWITCH
Q1127 SWITCH
FL1101 DEMOD LPF
Q1138 BUFFER
Q1114, 1144 DC BIAS
Q1117 EQ.
Q1122 E/L SWITCH
Q1123 PEAKING AMP
Q1125 BUFFER
<L/E>
<PB4.9V>
<E/L>
<VIDEO4.9V>
<SOFT.LIM.OUT>
<DOP>
<CAP.ON>
<*SP/LP>
<*E/L>
<*MP/ME>
<PB5V>
CN1101 26P (C-2)
1 PB Y RF
2 CAP ON
3 REC Y RF OUT
4 E DET
5 RF GND
6 DOP
7 RF GND
8 E*MP
9 SOFT LIM OUT
10 N.C.
11 REC Y RF IN
12 *SP/LP
13 *ME/MP
14 E/L
15 DEMOD OUT
16 PB4.9V
17 VGI
18 *L/E
19 PB Y OUT
20 *E/L
21 VIDEO GND
22 EDIT
23 VIDEO GND
24 VIDEO 4.9V
25 EMP
26 Y COMB OUT
TO VS-126 BOARD (5/5) CN205
<See Page 4-37>

PATH

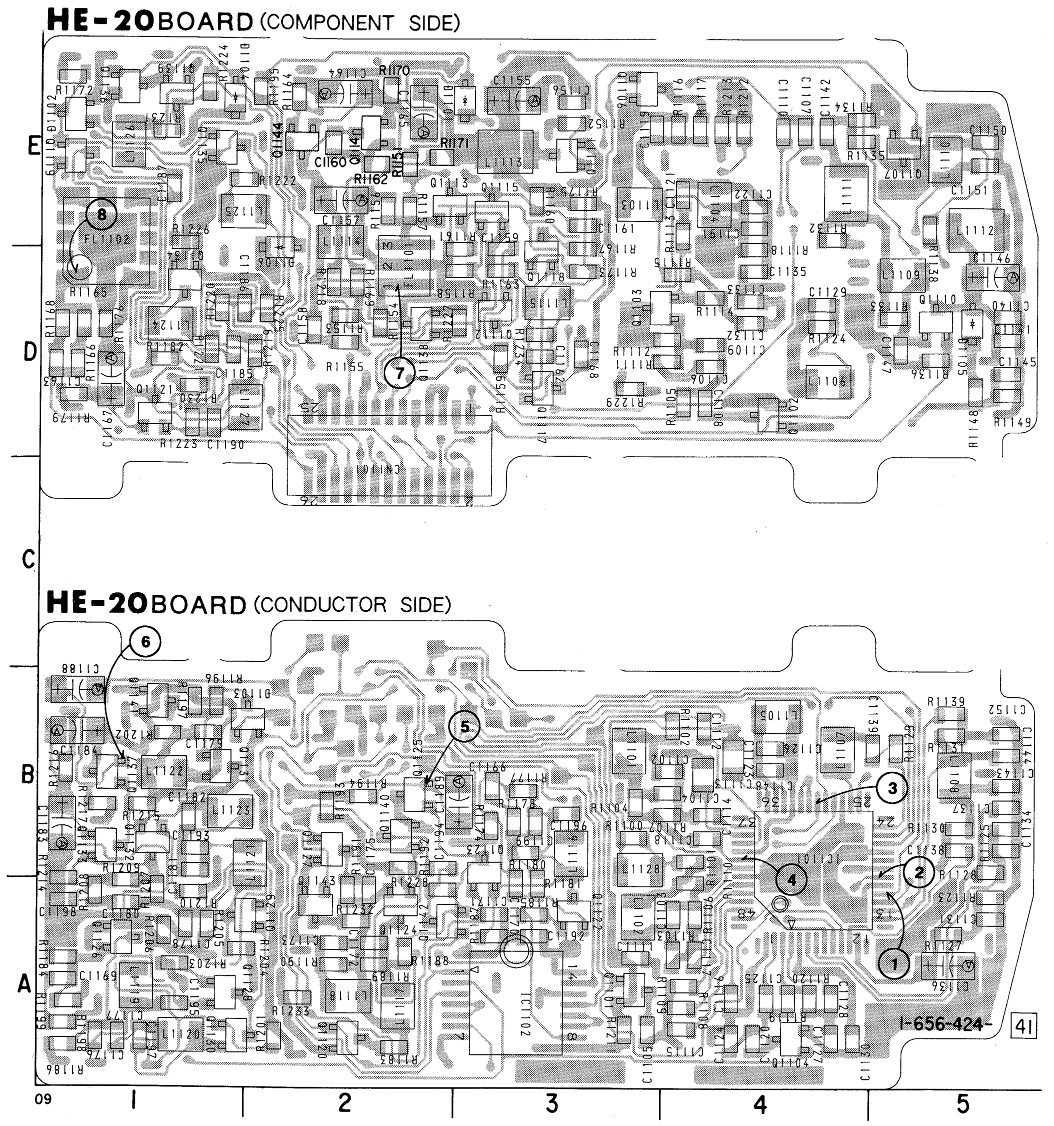
	VIDEO SIGNAL	
OMA	Y	Y/CHROMA
	➡	
	⇨	

HE-20 BOARD



HE-20 (Hi8 VIDEO) PRINTED WIRING BOARD

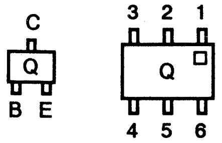
There are few cases that the part isn't mounted in this model is printed on this diagram.


HE-20BOARD (COMPONENT SIDE)
HE-20BOARD (CONDUCTOR SIDE)
E
D
C
B
A
1
2
3
4
5
09
1-656-424-
41

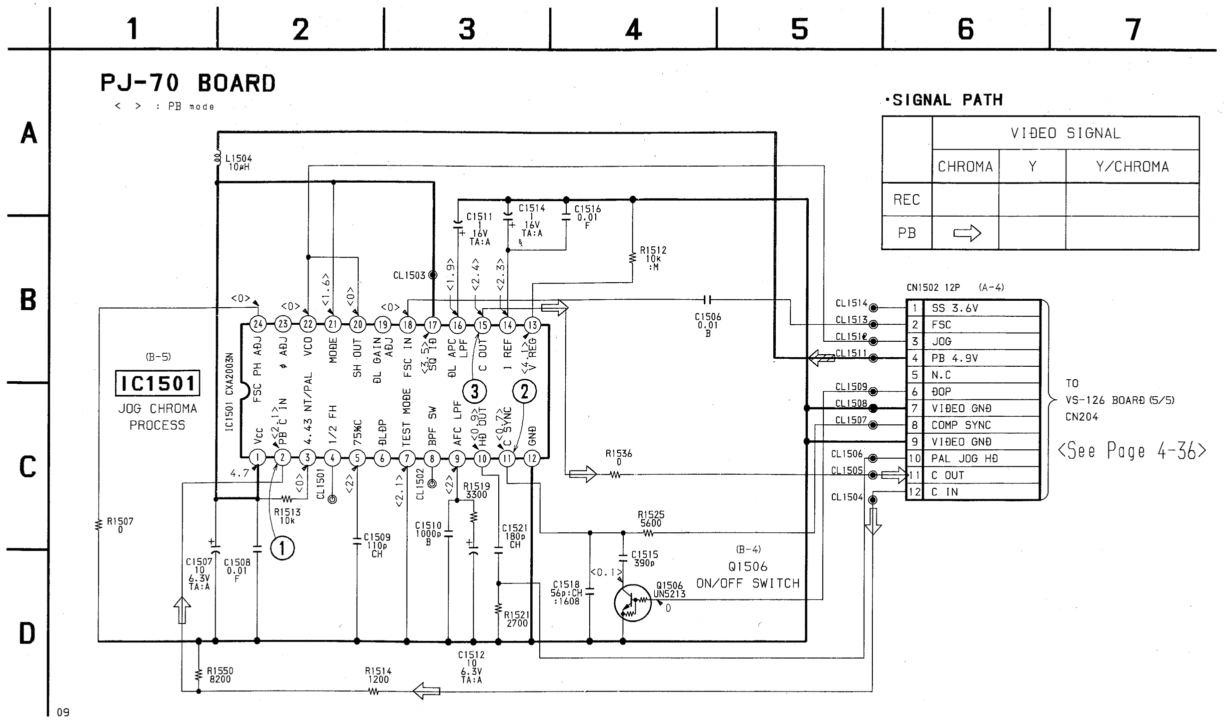
HE-20 BOARD

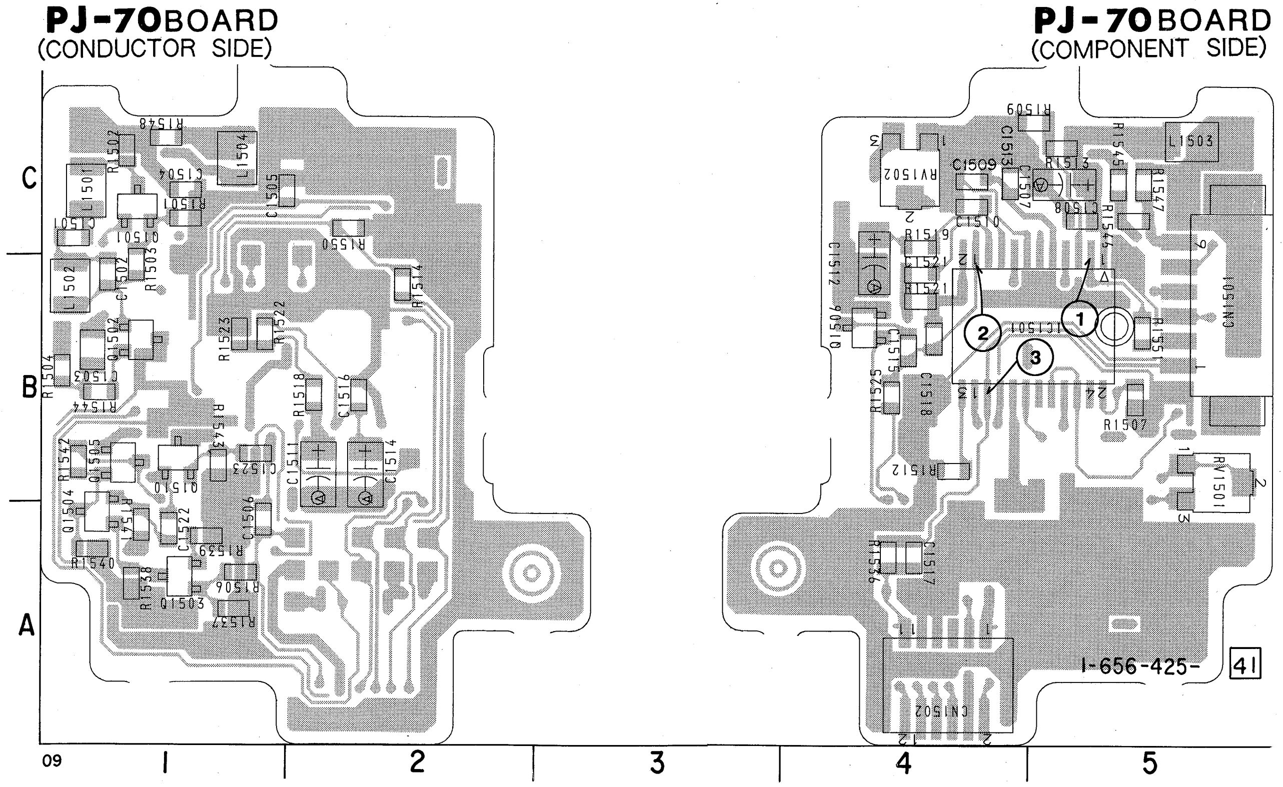
C1103	A-4
C1106	D-4
C1107	E-4
C1108	D-4
C1109	D-4
C1110	E-4
C1111	A-3
C1112	B-4
C1113	B-4
C1114	B-4
C1115	A-4
C1116	A-4
C1117	A-4
C1118	B-4
C1119	E-3
C1121	E-4
C1122	E-4
C1123	B-4
C1124	A-4
C1125	A-4
C1126	B-4
C1127	A-4
C1128	A-4
C1129	D-4
C1130	A-4
C1131	A-5
C1132	D-4
C1133	D-4
C1134	B-5
C1135	D-4
C1136	A-5
C1137	B-5
C1138	B-5
C1139	B-4
C1140	D-5
C1141	D-5
C1142	E-4
C1143	B-5
C1144	B-5
C1146	D-5
C1147	D-5
C1148	B-4
C1151	E-5
C1152	B-5
C1155	E-3
C1156	E-3
C1157	E-2
C1160	E-2
C1161	E-3
C1162	D-3
C1163	D-1
C1164	E-2
C1165	E-2
C1166	B-3
C1167	D-1
C1168	D-3
C1169	A-1
C1170	A-3
C1171	A-3
C1173	A-2
C1175	A-2
C1176	A-1
C1177	A-1
C1178	A-1
C1179	B-1
C1180	A-1
C1181	B-1
C1182	B-1
C1183	B-1
C1184	B-1
C1185	D-1
C1186	D-1
C1187	E-1
C1188	B-1
C1189	B-3
C1192	A-3
C1196	B-3
C1198	A-1
C1199	B-3
CN1101	C-2
D1101	E-3
D1102	E-1
D1103	B-2
D1104	E-1
D1105	D-5
FL1101	D-2
FL1102	E-1
IC1101	B-4
IC1102	A-3
L1101	B-3
L1102	A-3
L1103	E-3
L1104	E-4
L1105	B-4
L1106	D-4
L1107	B-4
L1108	B-5
L1109	D-5
L1110	E-5
L1111	E-4
L1112	E-5
L1113	E-3
L1115	D-3
L1116	B-3
L1118	A-2
L1119	A-1
L1120	A-1
L1121	B-2
L1122	B-1
L1123	B-1
L1124	D-1
L1125	E-1
L1126	E-1
L1128	B-3
Q1102	D-4
Q1103	D-3
Q1107	E-5
Q1110	D-5
Q1111	E-3
Q1113	E-2
Q1114	E-2
Q1115	E-3
Q1117	D-3
Q1118	D-3
Q1119	E-1
Q1120	A-2
Q1121	D-1
Q1122	A-3
Q1123	B-3
Q1125	B-2
Q1126	A-1
Q1127	B-2
Q1128	A-1
Q1129	A-1
Q1130	A-1
Q1131	B-1
Q1132	B-1
Q1133	B-1
Q1134	D-1
Q1135	E-1
Q1136	E-1
Q1137	B-1
Q1138	D-2
Q1139	E-1
Q1143	A-2
Q1144	E-2
R1100	B-3
R1101	B-4
R1102	B-4
R1103	A-4
R1104	B-3
R1105	D-4
R1106	A-4
R1107	B-4
R1108	A-4
R1109	A-4
R1110	A-4
R1111	D-3
R1112	D-3
R1113	E-4
R1114	D-4
R1115	D-4
R1116	E-4
R1118	E-4
R1119	A-4
R1120	A-4
R1123	A-5
R1124	D-4
R1125	B-5
R1127	A-5
R1128	B-5
R1129	B-5
R1130	B-5
R1131	B-5
R1132	E-4
R1134	E-4
R1135	E-4
R1136	D-5
R1138	E-5
R1148	D-5
R1149	D-5
R1151	E-2
R1152	E-3
R1153	D-2
R1154	D-2
R1155	D-2
R1156	E-2
R1157	E-2
R1158	D-2
R1159	D-3
R1160	E-3
R1161	E-2
R1162	E-2
R1163	D-3
R1164	E-2
R1165	D-1
R1166	D-1
R1167	E-3
R1168	D-1
R1169	D-2
R1170	E-2
R1171	E-2
R1172	E-1
R1173	D-3
R1174	B-3
R1175	E-3
R1176	D-1
R1177	B-3
R1178	B-3
R1179	D-1
R1181	A-3
R1182	D-1
R1183	A-2
R1184	A-1
R1185	A-3
R1186	A-1
R1187	A-3
R1188	A-2
R1189	A-2
R1191	A-2
R1194	B-2
R1195	E-2
R1196	B-1
R1197	B-1
R1198	A-1
R1199	A-1
R1201	A-2
R1202	B-1
R1203	A-1
R1204	A-1
R1205	A-1
R1206	A-1
R1207	A-1
R1208	A-1
R1209	A-1
R1210	A-1
R1212	E-4
R1213	E-4
R1214	A-1
R1215	B-1
R1216	B-1
R1217	B-1
R1218	D-2
R1219	D-2
R1220	D-1
R1221	D-1
R1222	E-1
R1223	D-1
R1224	E-1
R1225	D-2
R1229	D-3
R1231	E-1
R1232	A-2

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor


C
Q
B E
3 2 1
Q
4 5 6

PJ-70 (PAL JOG) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

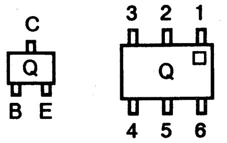

1
2
3
4
5
6
7
A
B
C
D
PJ-70 BOARD
< > : PB mode
•SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
REC
PB
(B-5)
IC1501
JOG CHROMA PROCESS
IC1501 CXA2003N
Vcc
PB C IN
4.43 NT/PAL
1/2 FH
75%C
DLDP
TEST MODE
BPF SW
AFC LPF
HD OUT
C SYNC
GND
FSC PH ADJ
φ ADJ
VCO
MODE
SH OUT
DL GAIN ADJ
FSC IN
SQ ID
DL APC LPF
C OUT
I REF
V REG
L1504 10μH
C1511 1 16V TA:A
C1514 1 16V TA:A
C1516 0.01 F
R1512 10k :M
CL1503
C1506 0.01 B
R1536 0
R1513 10k
C1509 110p CH
C1510 1000p B
R1519 3300
C1521 180p CH
R1525 5600
C1515 390p
C1518 56p:CH :1608
R1521 2700
(B-4)
Q1506
ON/OFF SWITCH
Q1506 UN5213
R1507 0
C1507 10 6.3V TA:A
C1508 0.01 F
C1512 10 6.3V TA:A
R1550 8200
R1514 1200
CL1501
CL1502
CN1502 12P (A-4)
1 SS 3.6V
2 FSC
3 JOG
4 PB 4.9V
5 N.C
6 DOP
7 VIDEO GND
8 COMP SYNC
9 VIDEO GND
10 PAL JOG HD
11 C OUT
12 C IN
CL1514
CL1513
CL1512
CL1511
CL1509
CL1508
CL1507
CL1506
CL1505
CL1504
TO VS-126 BOARD (5/5) CN204
<See Page 4-36>
09


PJ-70BOARD (CONDUCTOR SIDE)
PJ-70BOARD (COMPONENT SIDE)
C
B
A
1
2
3
4
5
09
1-656-425-
41

PJ-70 BOARD

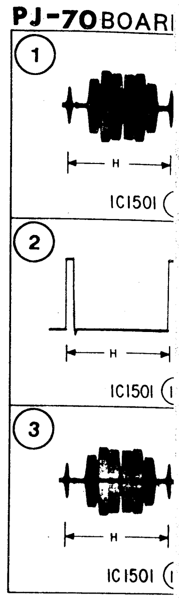
C1506	A-1
C1507	C-5
C1508	C-5
C1509	C-4
C1510	C-4
C1511	B-2
C1512	B-4
C1514	B-2
C1515	B-4
C1516	B-2
C1518	B-4
C1521	B-4
CN1502	A-4
IC1501	B-5
L1504	C-1
Q1506	B-4
R1507	B-5
R1512	B-4
R1513	C-5
R1514	B-2
R1519	C-4
R1521	B-4
R1525	B-4
R1536	A-4
R1550	C-2

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor


C
Q
B E
3 2 1
Q
4 5 6

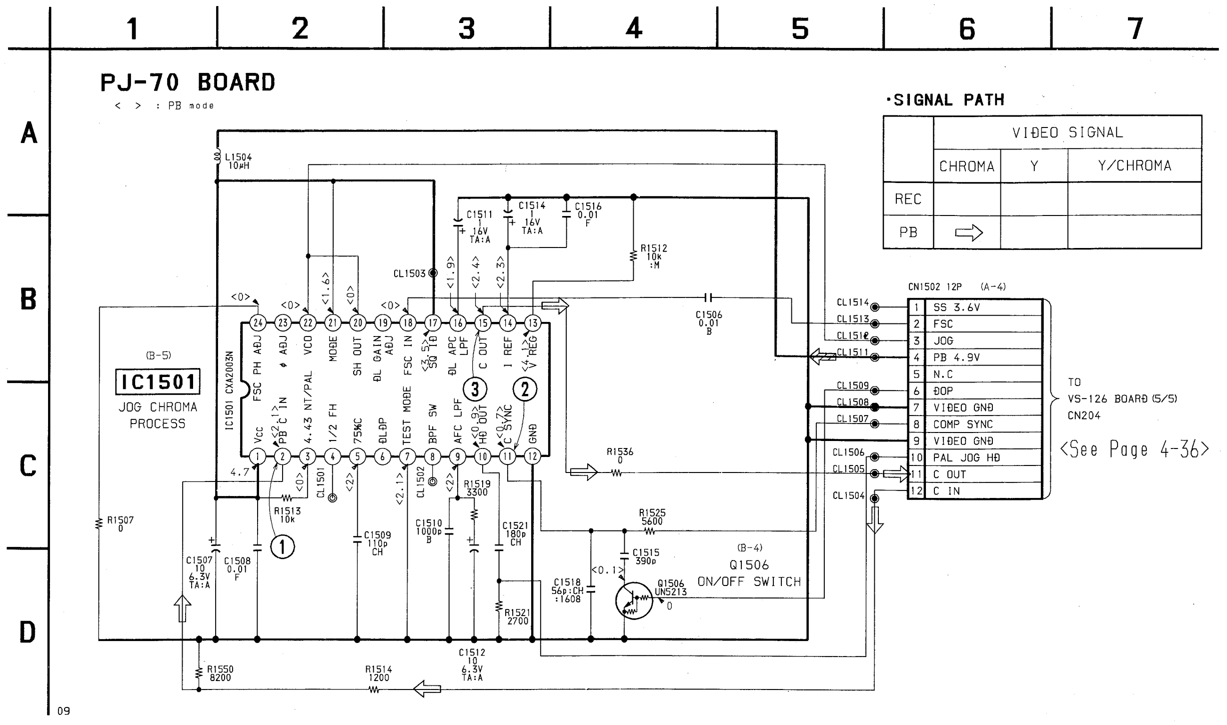
There are few cases that the part isn't mounted in this model is printed on this diagram.

< >: The page
SUPPLE


PJ-70BOARI
1
H
IC1501
2
H
IC1501
3
H
IC1501

L1121	B-2
L1122	B-1
L1123	B-1
L1124	D-1
L1125	E-1
L1126	E-1
L1128	B-3
Q1102	D-4
Q1103	D-3
Q1107	E-5
Q1110	D-5
Q1111	E-3
Q1113	E-2
Q1114	E-2
Q1115	E-3
Q1117	D-3
Q1118	D-3
Q1119	E-1
Q1120	A-2
Q1121	D-1
Q1122	A-3
Q1123	B-3
Q1125	B-2
Q1126	A-1
Q1127	B-2
Q1128	A-1
Q1129	A-1
Q1130	A-1
Q1131	B-1
Q1132	B-1
Q1133	B-1
Q1134	D-1
Q1135	E-1
Q1136	E-1
Q1137	B-1
Q1138	D-2
Q1139	E-1
Q1143	A-2
Q1144	E-2
R1100	B-3
R1101	B-4
R1102	B-4
R1103	A-4
R1104	B-3
R1105	D-4
R1106	A-4
R1107	B-4
R1108	A-4
R1109	A-4
R1110	A-4
R1111	D-3
R1112	D-3
R1113	E-4
R1114	D-4
R1115	D-4
R1116	E-4
R1118	E-4
R1119	A-4
R1120	A-4
R1123	A-5
R1124	D-4
R1125	B-5
R1127	A-5
R1128	B-5
R1129	B-5
R1130	B-5
R1131	B-5
R1132	E-4
R1134	E-4
R1135	E-4
R1136	D-5
R1138	E-5
R1148	D-5
R1149	D-5
R1151	E-2
R1152	E-3
R1153	D-2
R1154	D-2
R1155	D-2
R1156	E-2
R1157	E-2
R1158	D-2
R1159	D-3
R1160	E-3
R1161	E-2
R1162	E-2
R1163	D-3
R1164	E-2
R1165	D-1
R1166	D-1
R1167	E-3
R1168	D-1
R1169	D-2
R1170	E-2
R1171	E-2
R1172	E-1
R1173	D-3
R1174	B-3
R1175	E-3
R1176	D-1
R1177	B-3
R1178	B-3
R1179	D-1
R1181	A-3
R1182	D-1
R1183	A-2
R1184	A-1
R1185	A-3
R1186	A-1
R1187	A-3
R1188	A-2
R1189	A-2
R1191	A-2
R1194	B-2
R1195	E-2
R1196	B-1
R1197	B-1
R1198	A-1
R1199	A-1
R1201	A-2
R1202	B-1
R1203	A-1
R1204	A-1
R1205	A-1
R1206	A-1
R1207	A-1
R1208	A-1
R1209	A-1
R1210	A-1
R1212	E-4
R1213	E-4
R1214	A-1
R1215	B-1
R1216	B-1
R1217	B-1
R1218	D-2
R1219	D-2
R1220	D-1
R1221	D-1
R1222	E-1
R1223	D-1
R1224	E-1
R1225	D-2
R1229	D-3
R1231	E-1
R1232	A-2

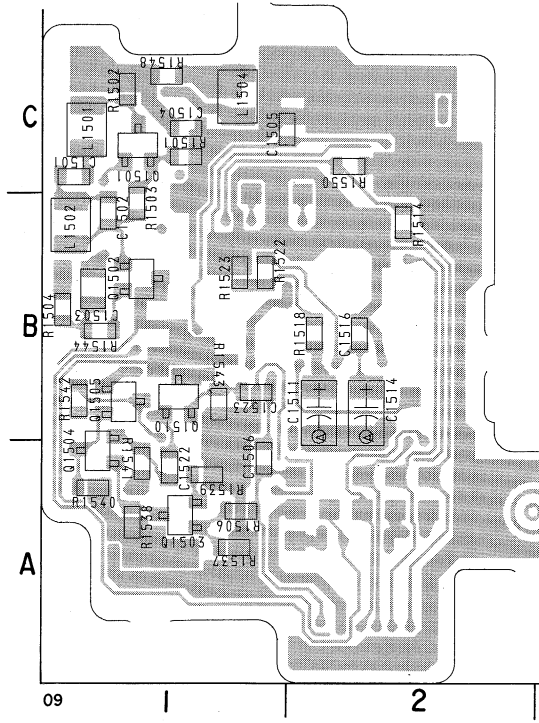
PJ-70 (PAL JOG) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
A
B
C
D
PJ-70 BOARD
< > : PB mode
L1504 10μH
C1511 1 16V TA:A
C1514 1 16V TA:A
C1516 0.01 F
R1512 10k :M
CL1503
<1.9>
<2.4>
<2.3>
<1.6>
<0>
<3.5> SQ ID
<4.1> V REG
(B-5)
IC1501
JOG CHROMA PROCESS
IC1501 CXA2003N
FSC PH ADJ
φ ADJ
VCO
MODE
SH OUT
DL GAIN ADJ
FSC IN
DL APC LPF
C OUT
I REF
Vcc
<2.1> PB C IN
4.43 NT/PAL
1/2 FH
75%C
DLDP
TEST MODE
BPF SW
AFC LPF
<0.9> HD OUT
<0.7> C SYNC
GND
4.7
<0>
CL1501
<2>
<2.1>
CL1502
R1513 10k
R1519 3300
R1507 0
C1507 10 6.3V TA:A
C1508 0.01 F
C1509 110p CH
C1510 1000p B
C1521 180p CH
R1521 2700
R1536 0
R1525 5600
C1515 390p
C1518 56p:CH :1608
<0.1>
Q1506 UN5213
(B-4)
Q1506
ON/OFF SWITCH
C1506 0.01 B
R1550 8200
R1514 1200
C1512 10 6.3V TA:A
09
CN1502 12P (A-4)
CL1514
CL1513
CL1512
CL1511
CL1509
CL1508
CL1507
CL1506
CL1505
CL1504
1 SS 3.6V
2 FSC
3 JOG
4 PB 4.9V
5 N.C
6 DDP
7 VIDEO GND
8 COMP SYNC
9 VIDEO GND
10 PAL JOG HD
11 C OUT
12 C IN
TO VS-126 BOARD (5/5) CN204
<See Page 4-36>

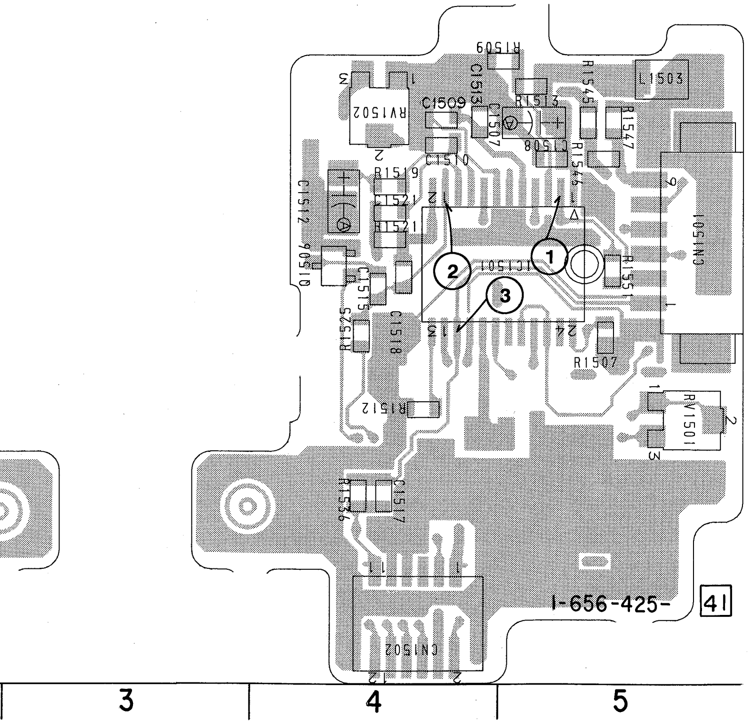
·SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			
PB	⇨		

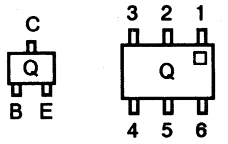
PJ-70BOARD
(CONDUCTOR SIDE)


C
B
A
R1548
L1504
C1505
R1550
R1523
C1522
R1518
C1516
C1511
C1514
Q1510
Q1503
R1540
09
1
2

PJ-70BOARD
(COMPONENT SIDE)


RV1502
C1509
R1509
L1503
C1510
R1519
R1521
C1512
R1525
C1518
IC1501
CN1501
R1507
R1512
RV1501
C1517
CN1502
①
②
③
1-656-425-
41
3
4
5

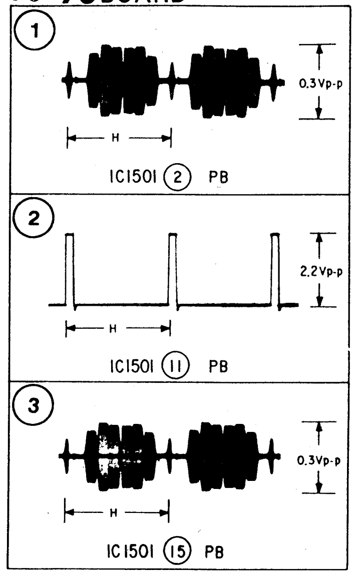
- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor


C
Q
B E
3 2 1
Q
4 5 6

There are few cases that the part isn't mounted in this model is printed on this diagram.

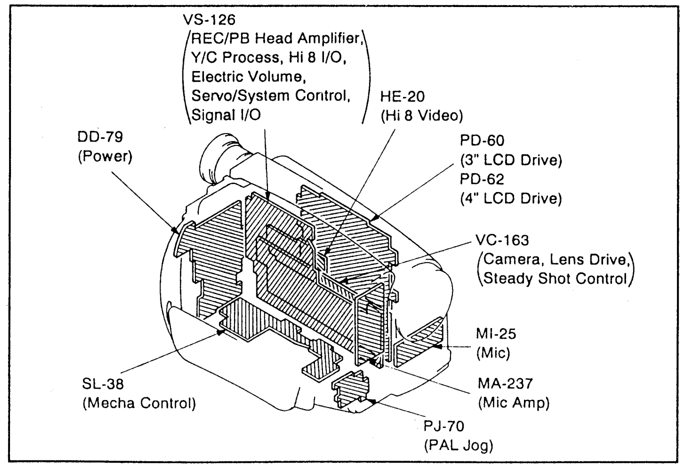
< >: The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.

PJ-70BOARD

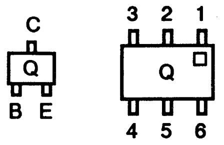


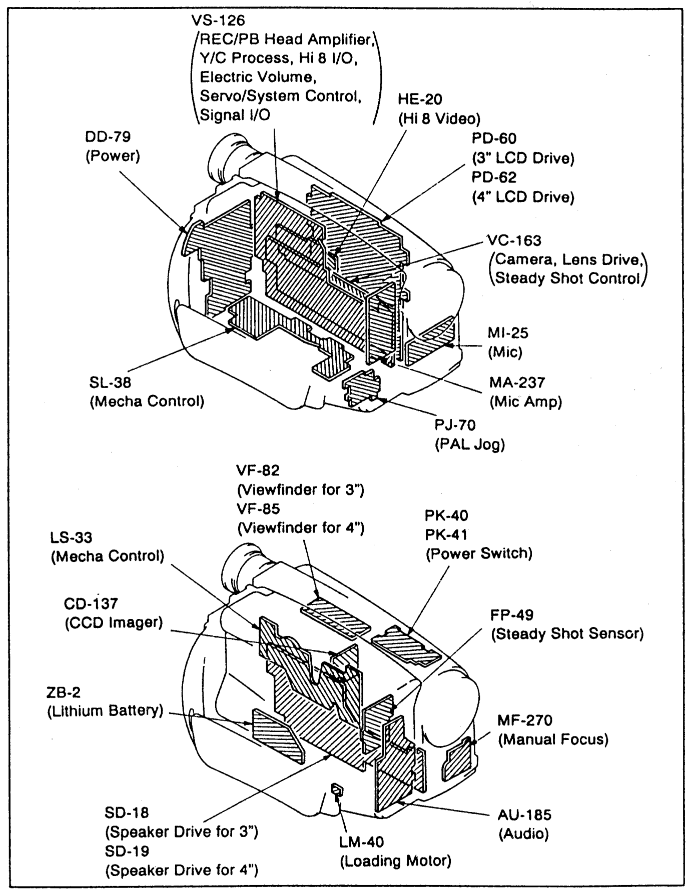
PJ-70 BOARD

C1506	A-1
C1507	C-5
C1508	C-5
C1509	C-4
C1510	C-4
C1511	B-2
C1512	B-4
C1514	B-2
C1515	B-4
C1516	B-2
C1518	B-4
C1521	B-4
CN1502	A-4
IC1501	B-5
L1504	C-1
Q1506	B-4
R1507	B-5
R1512	B-4
R1513	C-5
R1514	B-2
R1519	C-4
R1521	B-4
R1525	B-4
R1536	A-4
R1550	C-2


VS-126
(REC/PB Head Amplifier, Y/C Process, Hi 8 I/O, Electric Volume, Servo/System Control, Signal I/O)
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive, Steady Shot Control)
MI-25
(Mic)
MA-237
(Mic Amp)
SL-38
(Mecha Control)
PJ-70
(PAL Jog)

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- ○ : Through hole.
- Chip transistor


C
Q
B E
3 2 1
Q
4 5 6


VS-126
(REC/PB Head Amplifier, Y/C Process, Hi 8 I/O, Electric Volume, Servo/System Control, Signal I/O)
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive, Steady Shot Control)
MI-25
(Mic)
SL-38
(Mecha Control)
MA-237
(Mic Amp)
PJ-70
(PAL Jog)
VF-82
(Viewfinder for 3")
VF-85
(Viewfinder for 4")
LS-33
(Mecha Control)
PK-40
PK-41
(Power Switch)
CD-137
(CCD Imager)
FP-49
(Steady Shot Sensor)
ZB-2
(Lithium Battery)
MF-270
(Manual Focus)
SD-18
(Speaker Drive for 3")
SD-19
(Speaker Drive for 4")
LM-40
(Loading Motor)
AU-185
(Audio)

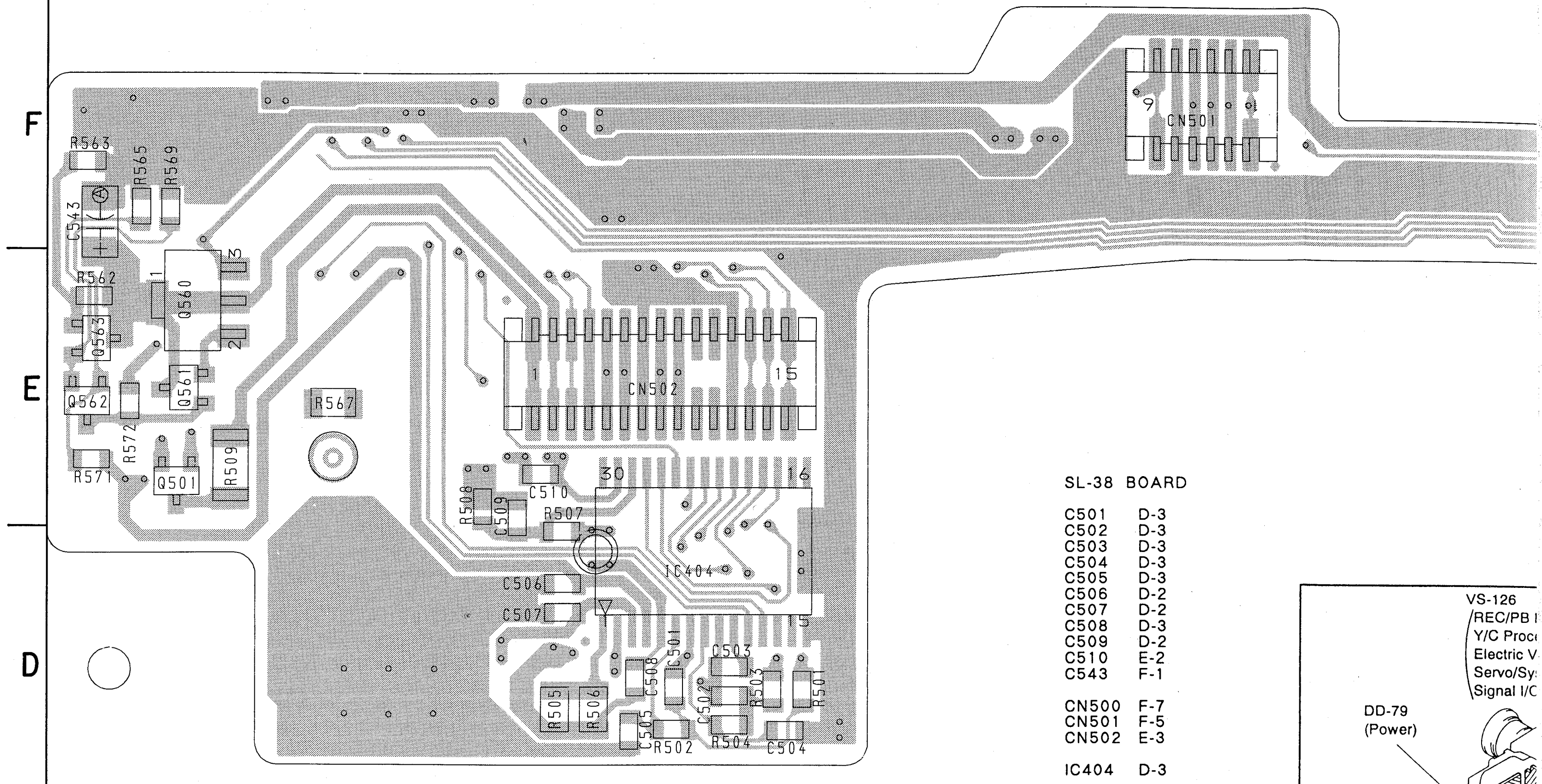
- When SL-38 Board is replaced, it should be replaced with VS-126 Board together.

There are few cases
printed on this diagr

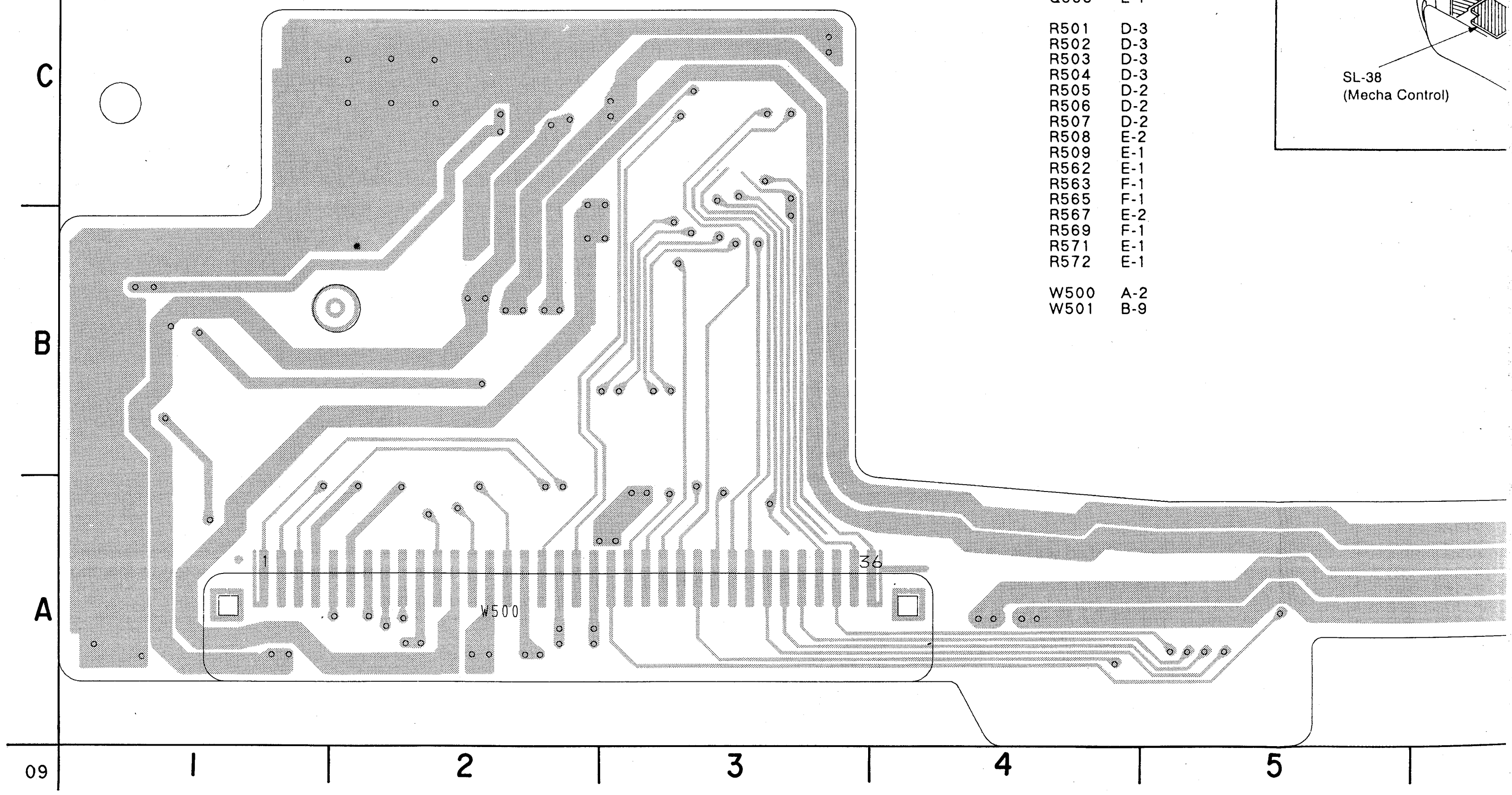
SL-38 (MECHA CONTROL), LS-33 (MECHA CONTROL) PRINTED WIRING BOARDS

— Ref. No. SL-38 BOARD: 2000 series, LS-33 BOARD: 7000 series —

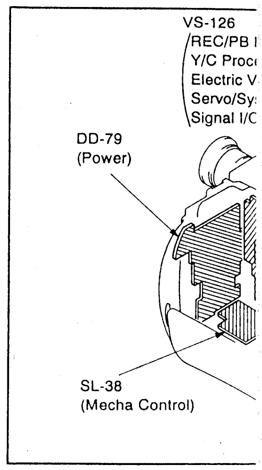
SL-38 BOARD (COMPONENT SIDE)


F
E
D
R563
C543
R565
R569
R562
Q560
Q563
Q562
Q561
R572
R571
Q501
R509
R567
CN501
CN502
1
15
30
16
IC404
R508
C509
C510
R507
C506
C507
C501
C503
C508
C502
R503
R501
R505
R506
C505
R502
R504
C504

SL-38 BOARD (CONDUCTOR SIDE)


C
B
A
1
36
W500
09
1
2
3
4
5

SL-38	BOARD
C501	D-3
C502	D-3
C503	D-3
C504	D-3
C505	D-3
C506	D-2
C507	D-2
C508	D-3
C509	D-2
C510	E-2
C543	F-1
CN500	F-7
CN501	F-5
CN502	E-3
IC404	D-3
Q501	E-1
Q560	E-1
Q561	E-1
Q562	E-1
Q563	E-1
R501	D-3
R502	D-3
R503	D-3
R504	D-3
R505	D-2
R506	D-2
R507	D-2
R508	E-2
R509	E-1
R562	E-1
R563	F-1
R565	F-1
R567	E-2
R569	F-1
R571	E-1
R572	E-1
W500	A-2
W501	B-9

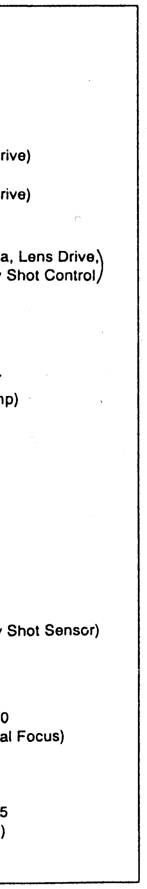

VS-126
(REC/PB I
Y/C Proc
Electric V
Servo/Sy
Signal I/C
DD-79
(Power)
SL-38
(Mecha Control)

- When SL-38 Board is replaced, it should be replaced with VS-126 Board together.

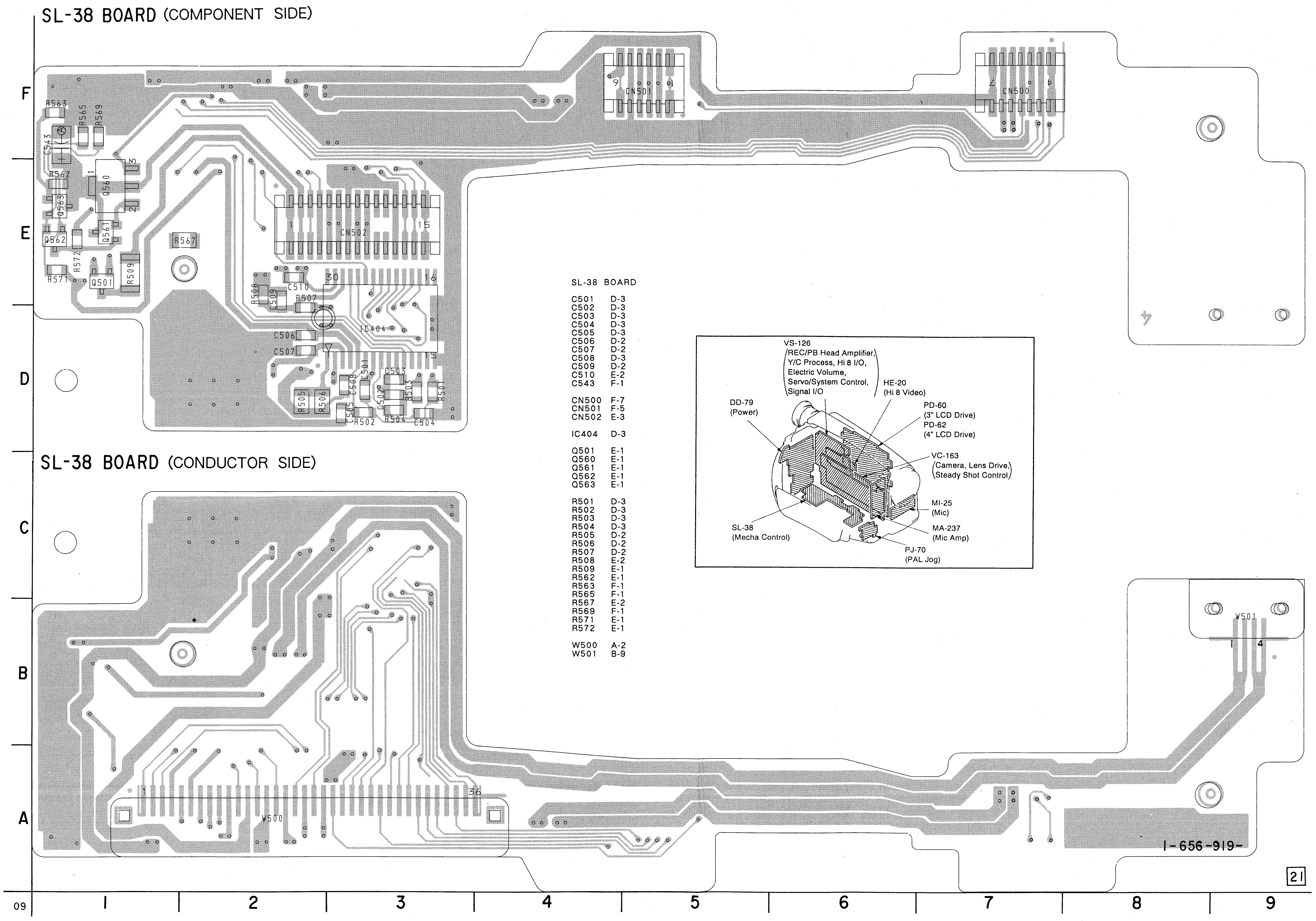
SL-38 (MECHA CONTROL), LS-33 (MECHA CONTROL) PRINTED WIRING BOARDS

— Ref. No. SL-38 BOARD: 2000 series, LS-33 BOARD: 7000 series —

There are few cases that the part isn't mounted in this model is printed on this diagram.



rive)
rive)
a, Lens Drive)
Shot Control)
np)
Shot Sensor)
0
al Focus)
5
)



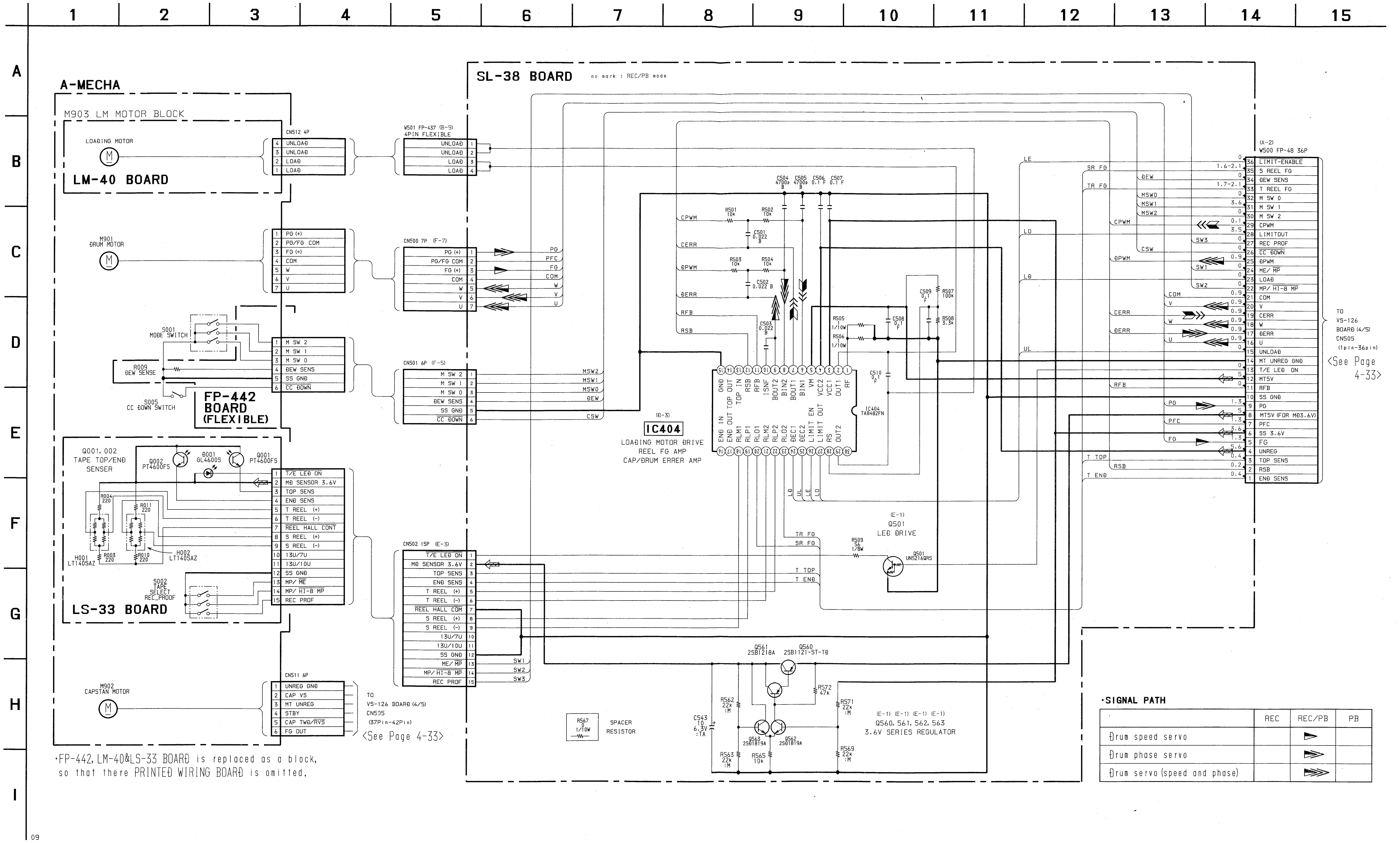
SL-38 BOARD (COMPONENT SIDE)
SL-38 BOARD (CONDUCTOR SIDE)
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
09
R563
R565
R569
C543
R562
Q560
Q563
Q561
Q562
R567
R572
R571
Q501
R509
CN502
1
15
30
16
C510
R508
C509
R507
C506
C507
IC404
C503
C501
C508
C505
C502
R503
R501
R505
R506
R502
R504
C504
CN501
CN500
W500
W501
1
36
1
4
1-656-919-
21
VS-126
REC/PB Head Amplifier, Y/C Process, Hi 8 I/O, Electric Volume, Servo/System Control, Signal I/O
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive, Steady Shot Control)
MI-25
(Mic)
MA-237
(Mic Amp)
SL-38
(Mecha Control)
PJ-70
(PAL Jog)

SL-38 BOARD	
C501	D-3
C502	D-3
C503	D-3
C504	D-3
C505	D-3
C506	D-2
C507	D-2
C508	D-3
C509	D-2
C510	E-2
C543	F-1
CN500	F-7
CN501	F-5
CN502	E-3
IC404	D-3
Q501	E-1
Q560	E-1
Q561	E-1
Q562	E-1
Q563	E-1
R501	D-3
R502	D-3
R503	D-3
R504	D-3
R505	D-2
R506	D-2
R507	D-2
R508	E-2
R509	E-1
R562	E-1
R563	F-1
R565	F-1
R567	E-2
R569	F-1
R571	E-1
R572	E-1
W500	A-2
W501	B-9

SL-38 (MECHA CONTROL), LS-33 (MECHA CONTROL) SCHEMATIC DIAGRAMS

— Ref. No. SL-38 BOARD: 2000 series, LS-33 BOARD: 7000 series —

< >: The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
A-MECHA
M903 LM MOTOR BLOCK
LOADING MOTOR
LM-40 BOARD
CN512 4P
UNLOAD
UNLOAD
LOAD
LOAD
M901 DRUM MOTOR
PG (+)
PG/FG COM
FG (+)
COM
W
V
U
S001 MODE SWITCH
R009 DEW SENSE
M SW 2
M SW 1
M SW 0
DEW SENS
SS GND
CC DOWN
S005 CC DOWN SWITCH
FP-442 BOARD (FLEXIBLE)
Q001, 002 TAPE TOP/END SENSER
Q002 PT4600FS
D001 GL4600S
Q001 PT4600FS
R004 220
R011 220
R003 220
R010 220
H001 LT140SAZ
H002 LT140SAZ
S002 TAPE SELECT REC_PROOF
LS-33 BOARD
T/E LED ON
MD SENSOR 3.6V
TOP SENS
END SENS
T REEL (+)
T REEL (-)
REEL HALL CONT
S REEL (+)
S REEL (-)
13U/7U
13U/10U
SS GND
MP/ ME
MP/ HI-8 MP
REC PROF
M902 CAPSTAN MOTOR
CN511 6P
UNREG GND
CAP VS
MT UNREG
STBY
CAP TWD/RVS
FG OUT
TO VS-126 BOARD (4/5) CN505 (37Pin-42Pin)
<See Page 4-33>
SL-38 BOARD
no mark : REC/PB mode
W501 FP-437 (B-9) 4PIN FLEXIBLE
CN500 7P (F-7)
CN501 6P (F-5)
CN502 15P (E-3)
ME/ MP
SW1
SW2
SW3
C504 4700p B
C505 4700p B
C506 0.1 F
C507 0.1 F
R501 10k
R502 10k
C501 0.022 B
R503 10k
R504 10k
C502 0.022 B
C503 0.022 B
R505 1 1/10W
R506 1 1/10W
C508 0.1 F
C509 0.1 F
R507 100k
R508 3.3k
C510 0.1 F
CPWM
CERR
DPWM
DERR
RFB
RSB
MSW2
MSW1
MSW0
DEW
CSW
(D-3)
IC404
LOADING MOTOR DRIVE
REEL FG AMP
CAP/DRUM ERRER AMP
GND
END OUT TOP OUT
TOP IN
ISNF
BOUT2
BIN2
BOUT1
BIN1
VM
VCC2
VCC1
OUT1
RF
END IN
RLM1
RLP1
RLO1
RLM2
RLP2
RLO2
DEC1
DEC2
LIMIT EN
LIMIT OUT
RS
OUT2
IC404 TA8482FN
LD
UL
LE
LO
TR FG
SR FG
T TOP
T END
(E-1) Q501 LED DRIVE
R509 56 1/8W
Q501 UN5216QRS
Q561 2SB1218A
Q560 2SB1121-ST-TD
R572 47k
R562 22k :M
R563 22k :M
R565 10k
R571 22k :M
R569 22k :M
C543 10 6.3V :TA
Q563 2SD1819A
Q562 2SD1819A
(E-1) (E-1) (E-1) (E-1)
Q560, 561, 562, 563
3.6V SERIES REGULATOR
R567 0 1/10W
SPACER RESISTOR
(A-2) W500 FP-48 36P
LIMIT-ENABLE
S REEL FG
DEW SENS
T REEL FG
M SW 0
M SW 1
M SW 2
CPWM
LIMITOUT
REC PROF
CC DOWN
DPWM
ME/ MP
LOAD
MP/ HI-8 MP
COM
V
CERR
W
DERR
U
UNLOAD
MT UNREG GND
T/E LED ON
MT5V
RFB
SS GND
PG
MT5V (FOR MD3.6V)
PFC
SS 3.6V
FG
UNREG
TOP SENS
RSB
END SENS
0
1.6-2.1
1.7-2.1
3.6
0.1
3.5
0.9
5
1.3
5.6
0.4
0.2
TO VS-126 BOARD (4/5) CN505 (1pin-36pin)
<See Page 4-33>
09

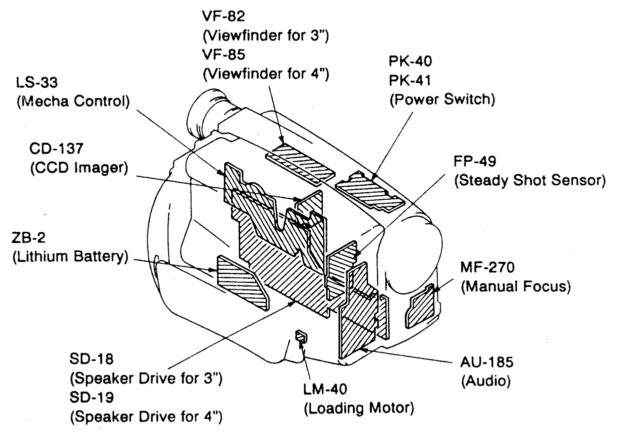
·SIGNAL PATH

	REC	REC/PB	PB
Drum speed servo		▶	
Drum phase servo		▶>	
Drum servo (speed and phase)		▶>>	

·FP-442, LM-40&LS-33 BOARD is replaced as a block, so that there PRINTED WIRING BOARD is omitted.

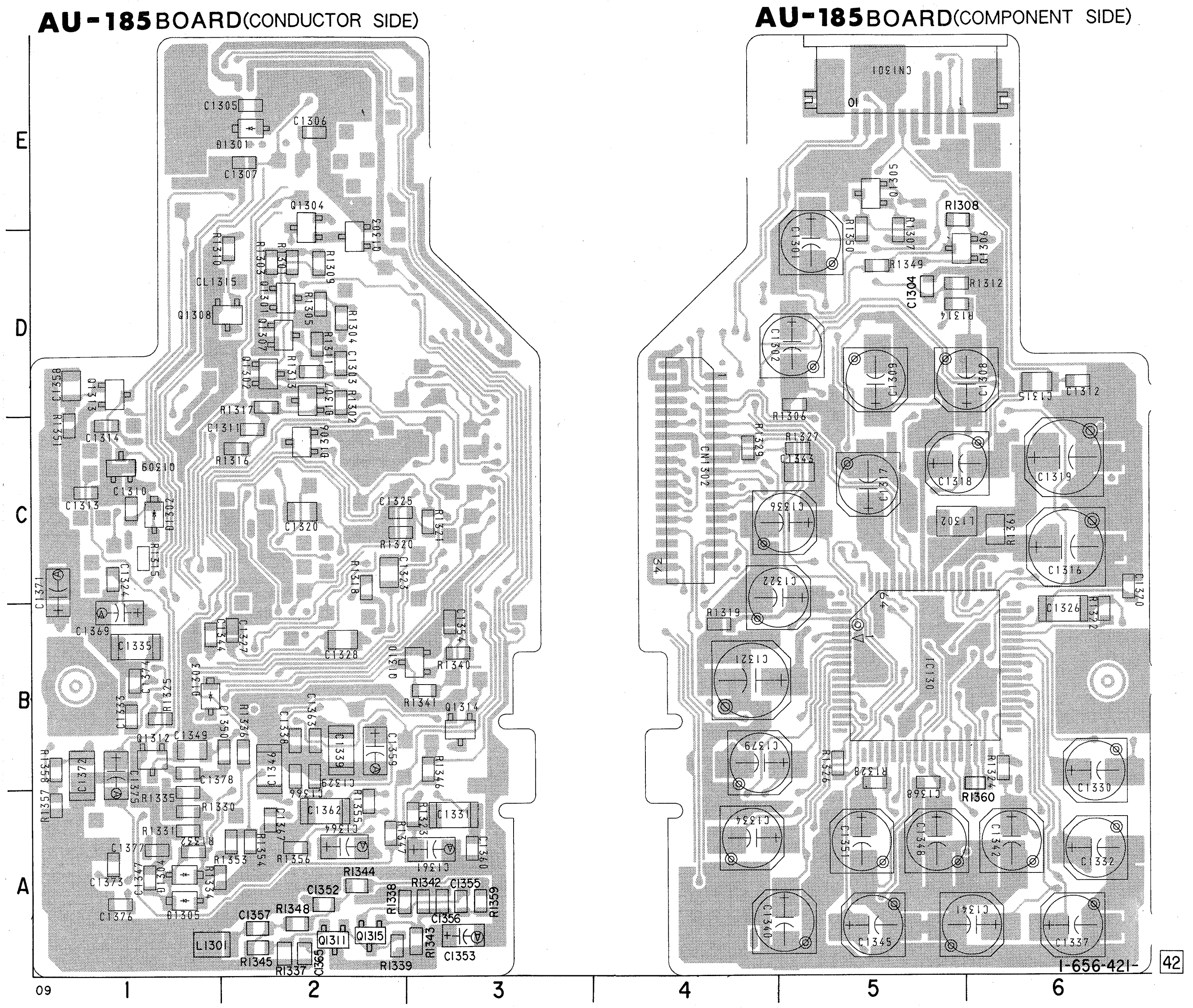
AU-185 BOARD

C1301	D-5
C1302	D-5
C1305	E-2
C1306	E-2
C1307	E-2
C1308	D-6
C1309	D-5
C1313	C-1
C1314	C-1
C1315	D-6
C1316	C-6
C1317	C-5
C1318	C-5
C1319	C-6
C1320	C-2
C1321	B-4
C1322	C-5
C1323	C-2
C1324	C-1
C1326	B-6
C1328	B-2
C1329	B-2
C1330	B-6
C1331	A-3
C1332	A-6
C1333	B-1
C1334	A-4
C1335	B-1
C1336	C-5
C1337	A-6
C1338	B-2
C1339	B-2
C1340	A-5
C1341	A-6
C1342	A-6
C1344	B-1
C1345	A-5
C1346	B-2
C1347	A-1
C1348	A-5
C1350	B-2
C1351	A-5
C1352	A-2
C1358	D-1
C1373	A-1
C1379	B-4
CN1301	E-5
CN1302	C-4
D1303	B-1
D1306	C-2
IC130	B-5
L1302	C-5
Q1301	D-2
Q1302	D-2
Q1303	D-2
Q1304	E-2
Q1305	E-5
Q1306	D-6
Q1307	D-2
Q1308	D-2
Q1309	C-1
Q1313	D-1
Q1314	B-3
R1301	D-2
R1302	D-2
R1303	D-2
R1304	D-2
R1306	D-5
R1307	D-5
R1308	E-5
R1309	D-2
R1310	D-2
R1313	D-2
R1314	D-5
R1316	C-2
R1317	D-2
R1318	C-2
R1319	B-4
R1320	C-2
R1321	C-3
R1322	B-6
R1323	A-3
R1324	B-6
R1325	B-1
R1326	B-5
R1328	B-5
R1329	C-4
R1331	A-1
R1332	A-1
R1334	A-1
R1336	B-2
R1341	B-3
R1344	A-2
R1346	B-3
R1347	A-2
R1348	A-2
R1349	D-5
R1350	D-5
R1351	C-1
R1355	A-1
R1358	B-1
R1361	C-6


VF-82
(Viewfinder for 3")
VF-85
(Viewfinder for 4")
PK-40
PK-41
(Power Switch)
LS-33
(Mecha Control)
CD-137
(CCD Imager)
FP-49
(Steady Shot Sensor)
ZB-2
(Lithium Battery)
MF-270
(Manual Focus)
SD-18
(Speaker Drive for 3")
SD-19
(Speaker Drive for 4")
LM-40
(Loading Motor)
AU-185
(Audio)

AU-185 (AUDIO) PRINTED WIRING BOARD

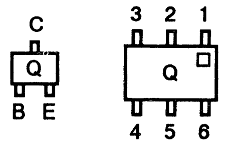
There are few cases that the part isn't mounted in this model is printed on this diagram.


AU-185 BOARD(CONDUCTOR SIDE)

AU-185 BOARD(COMPONENT SIDE)
E
D
C
B
A
1
2
3
4
5
6
09
1-656-421-
42
CN1301
CN1302
IC130
C1305
C1306
C1307
R1301
Q1304
Q1305
Q1306
R1308
R1349
R1312
C1304
L1302
R1361
C1316
C1326
C1319
C1318
C1330
C1332
C1353
C1355
C1356
C1357
C1352
R1342
R1344
R1345
R1348
R1337
R1339
R1360
Q1311
Q1314
Q1315
L1301

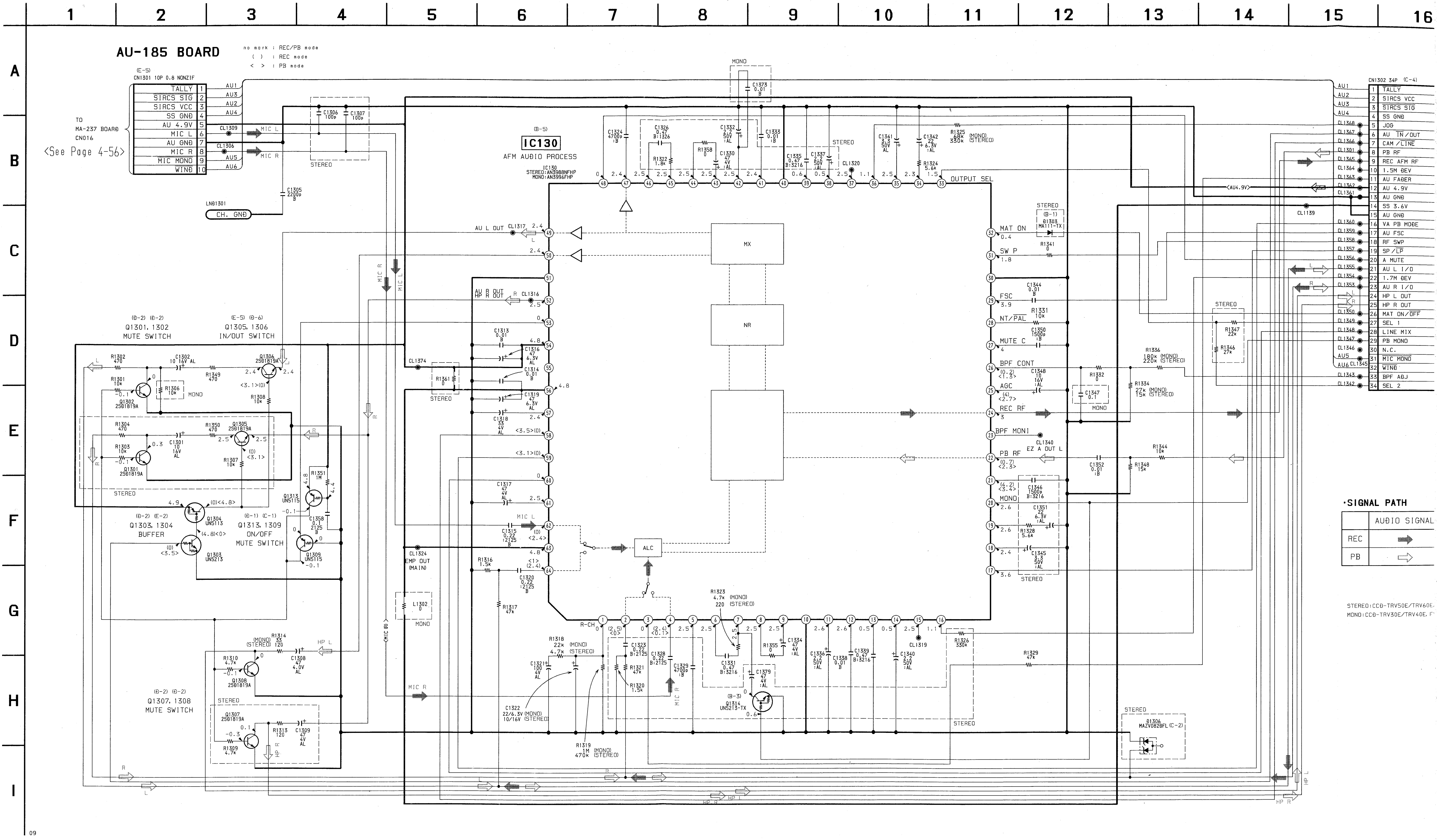
- When AU-185 Board is replaced, it should be replaced with MA-237 Board and Flexible flat cable FFC-199 10 Pin (1-775-961-11) together.

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor

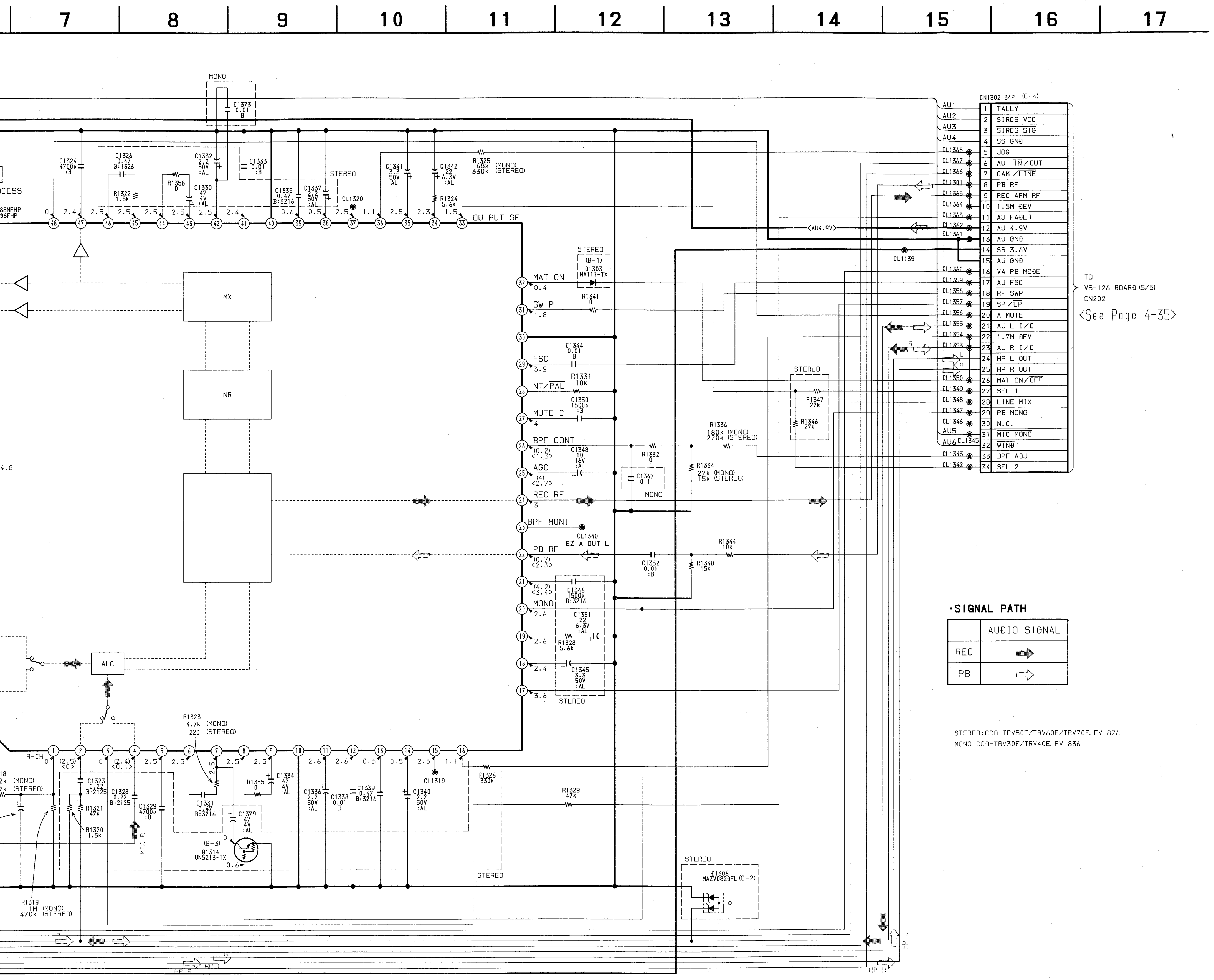

C
Q
B E
3 2 1
Q
4 5 6

AU-185 (AUDIO) SCHEMATIC DIAGRAM

< >: The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I
AU-185 BOARD
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
(E-5)
CN1301 10P 0.8 NONZIF
TALLY
SIRCS SIG
SIRCS VCC
SS GND
AU 4.9V
MIC L
AU GND
MIC R
MIC MONO
WIND
TO MA-237 BOARD CN016
<See Page 4-56>
LND1301
CH. GND
(B-5)
IC130
AFM AUDIO PROCESS
IC130 STEREO:AN3988NFHP MONO:AN3996FHP
OUTPUT SEL
MX
NR
ALC
AU L OUT
AU R OUT HP R OUT
MAT ON
SW P
FSC
NT/PAL
MUTE C
BPF CONT
AGC
REC RF
BPF MONI
PB RF
MONO
R-CH
EMP OUT (MAIN)
Q1301, 1302 MUTE SWITCH
Q1305, 1306 IN/OUT SWITCH
Q1303, 1304 BUFFER
Q1313, 1309 ON/OFF MUTE SWITCH
Q1307, 1308 MUTE SWITCH
Q1314 UN5213-TX
D1303 MA111-TX
D1306 MAZV082BFL
CN1302 34P (C-4)
TALLY
SIRCS VCC
SIRCS SIG
SS GND
JOG
AU IN/OUT
CAM/LINE
PB RF
REC AFM RF
1.5M DEV
AU FADER
AU 4.9V
AU GND
SS 3.6V
AU GND
VA PB MODE
AU FSC
RF SWP
SP/LP
A MUTE
AU L I/O
1.7M DEV
AU R I/O
HP L OUT
HP R OUT
MAT ON/OFF
SEL 1
LINE MIX
PB MONO
N.C.
MIC MONO
WIND
BPF ADJ
SEL 2
STEREO
MONO
MIC L
MIC R
HP L
HP R
·SIGNAL PATH
AUDIO SIGNAL
REC
PB
STEREO:CCD-TRV50E/TRV60E
MONO:CCD-TRV30E/TRV40E
09


7
8
9
10
11
12
13
14
15
16
17
MONO
C1373 0.01 B
C1324 4700p :B
C1326 0.47 B:1326
R1322 1.8k
R1358 0
C1330 47 4V :AL
C1332 2.2 50V :AL
C1333 0.01 :B
C1335 0.47 B:3216
C1337 2.2 50V :AL
STEREO
CL1320
C1341 3.3 50V AL
C1342 22 6.3V :AL
R1324 5.6k
R1325 68k (MONO) 330k (STEREO)
CESS
OUTPUT SEL
MX
NR
ALC
MAT ON
SW P
FSC
NT/PAL
MUTE C
BPF CONT
AGC
REC RF
BPF MONI
PB RF
MONO
STEREO
(B-1) D1303 MA111-TX
R1341 0
C1344 0.01 B
R1331 10k
C1350 1500p :B
C1348 10 16V :AL
R1332 0
C1347 0.1
C1346 1500p B:3216
C1351 22 6.3V :AL
R1328 5.6k
C1345 3.3 50V :AL
CL1340 EZ A OUT L
C1352 0.01 :B
R1348 15k
R1344 10k
R1336 180k (MONO) 220k (STEREO)
R1334 27k (MONO) 15k (STEREO)
R1347 22k
R1346 27k
<AU4.9V>
CL1139
R-CH
R1323 4.7k (MONO) 220 (STEREO)
C1323 0.22 B:2125
C1328 0.22 B:2125
C1329 4700p :B
R1321 47k
R1320 1.5k
MIC R
C1331 0.47 B:3216
C1379 47 4V :AL
R1355 0
C1334 47 4V :AL
(B-3) Q1314 UN5213-TX
C1336 2.2 50V :AL
C1338 0.01 B
C1339 0.47 B:3216
C1340 2.2 50V :AL
CL1319
R1326 330k
R1329 47k
R1319 1M (MONO) 470k (STEREO)
D1306 MAZV082BFL (C-2)
HP R
HP L
CN1302 34P (C-4)
AU1 1 TALLY
AU2 2 SIRCS VCC
AU3 3 SIRCS SIG
AU4 4 SS GND
CL1368 5 JOG
CL1367 6 AU IN/OUT
CL1366 7 CAM/LINE
CL1301 8 PB RF
CL1365 9 REC AFM RF
CL1364 10 1.5M DEV
CL1363 11 AU FADER
CL1362 12 AU 4.9V
CL1361 13 AU GND
14 SS 3.6V
15 AU GND
CL1360 16 VA PB MODE
CL1359 17 AU FSC
CL1358 18 RF SWP
CL1357 19 SP/LP
CL1356 20 A MUTE
CL1355 21 AU L I/O
CL1354 22 1.7M DEV
CL1353 23 AU R I/O
24 HP L OUT
25 HP R OUT
CL1350 26 MAT ON/OFF
CL1349 27 SEL 1
CL1348 28 LINE MIX
CL1347 29 PB MONO
CL1346 30 N.C.
AU5 31 MIC MONO
AU6 CL1345 32 WIND
CL1343 33 BPF ADJ
CL1342 34 SEL 2
TO VS-126 BOARD (5/5) CN202
<See Page 4-35>

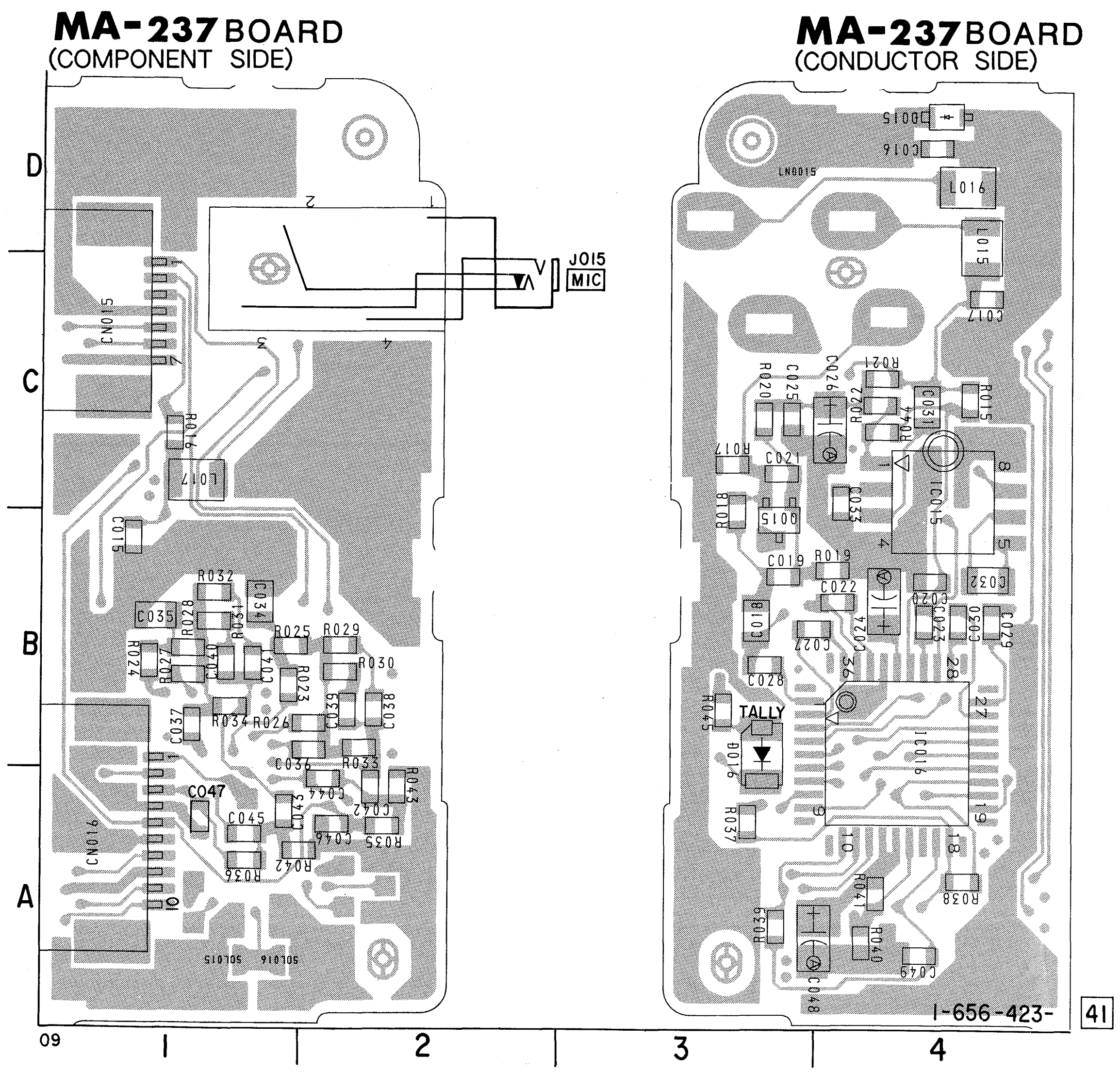
·SIGNAL PATH

	AUDIO SIGNAL
REC	➡
PB	⇨

STEREO:CCD-TRV50E/TRV60E/TRV70E, FV 876
MONO:CCD-TRV30E/TRV40E, FV 836

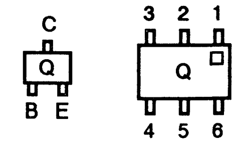
MA-237 (MIC AMP) PRINTED WIRING BOARD

There are few cases that the part isn't mounted in this model is printed on this diagram.

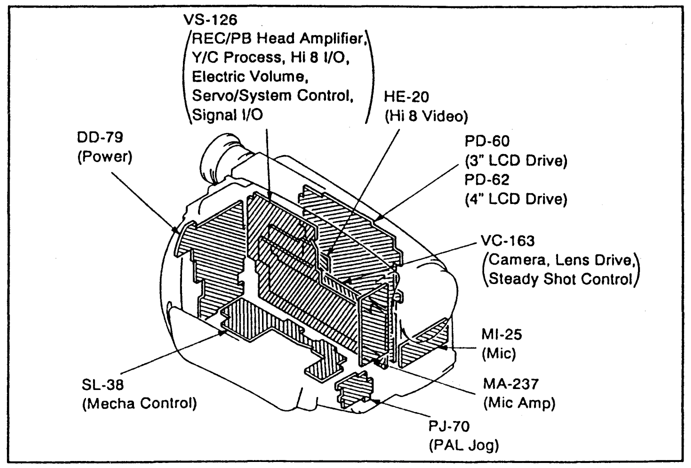

MA-237 BOARD
(COMPONENT SIDE)
MA-237 BOARD
(CONDUCTOR SIDE)
J015
MIC
CN015
CN016
IC015
IC016
TALLY
D016
Q015
LN0015
1-656-423-
41
09
D
C
B
A
1
2
3
4

MA-237 BOARD	
C015	B-1
C016	D-4
C017	C-4
C018	B-3
C019	B-3
C020	B-4
C021	C-3
C022	B-4
C023	B-4
C024	B-4
C026	C-4
C027	B-4
C028	B-3
C029	B-4
C030	B-4
C031	C-4
C032	B-4
C033	C-4
C034	B-1
C035	B-1
C036	B-2
C037	B-1
C038	B-2
C039	B-2
C040	B-1
C042	A-2
C043	A-1
C044	A-2
C045	A-1
C049	A-4
CN015	C-1
CN016	A-1
D016	B-3
IC015	C-4
IC016	B-4
J015	C-2
L015	D-4
L016	D-4
L017	C-1
Q015	B-3
R015	C-4
R016	C-1
R017	C-3
R018	B-3
R019	B-4
R020	C-3
R021	C-4
R022	C-4
R023	B-1
R024	B-1
R025	B-1
R026	B-2
R027	B-1
R028	B-1
R029	B-2
R030	B-2
R031	B-1
R033	B-2
R034	B-1
R035	A-2
R036	A-1
R037	A-3
R038	A-4
R039	A-3
R042	A-1
R043	A-2
R044	C-4
R045	B-3

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor

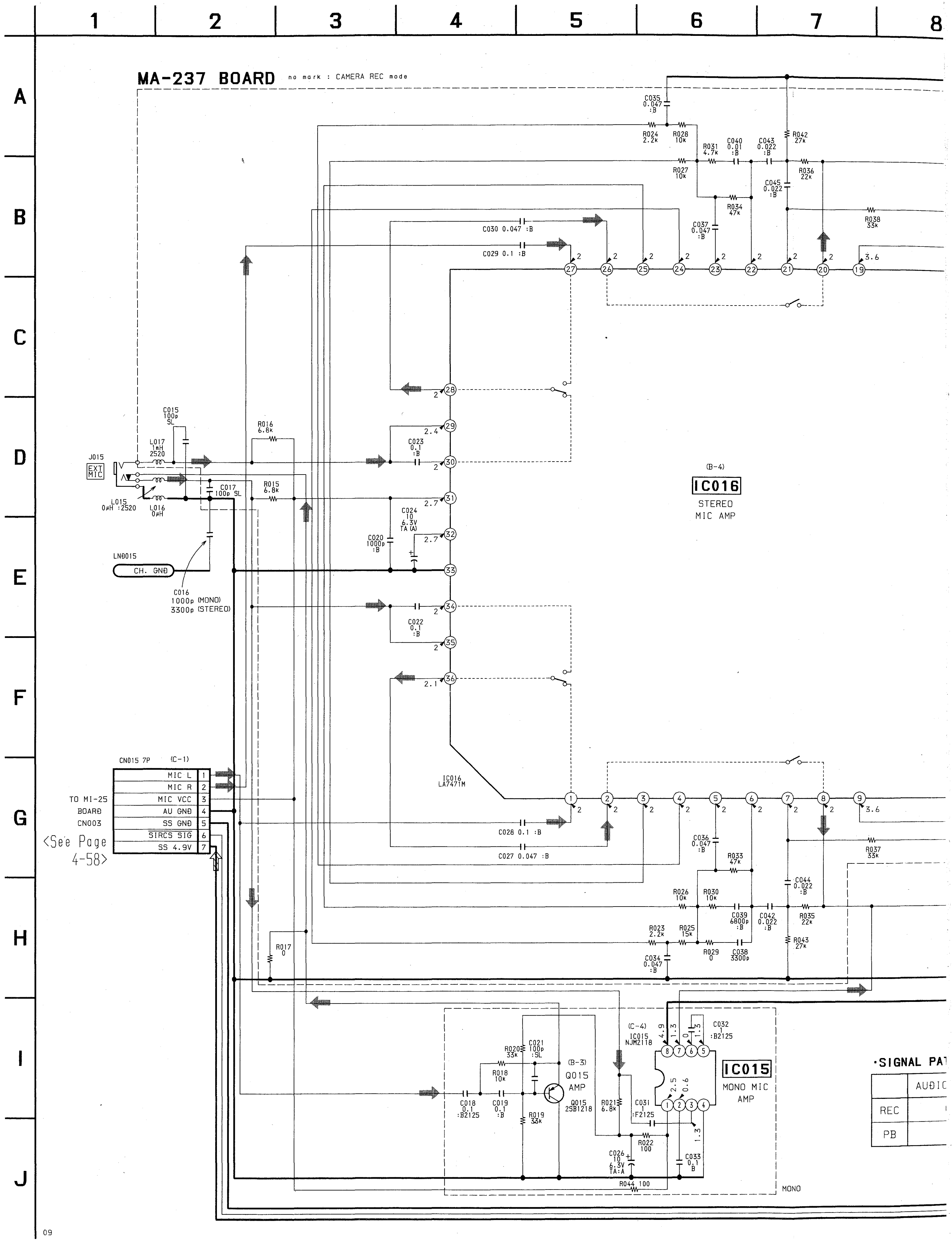

C
Q
B E
3 2 1
Q
4 5 6

- When MA-237 Board is replaced, it should be replaced with AU-185 Board and Flexible flat cable FFC-199 10 Pin (1-775-961-11) together.


VS-126
(REC/PB Head Amplifier, Y/C Process, Hi 8 I/O, Electric Volume, Servo/System Control, Signal I/O)
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive, Steady Shot Control)
MI-25
(Mic)
MA-237
(Mic Amp)
SL-38
(Mecha Control)
PJ-70
(PAL Jog)

< >: The p
SUPP

MA-237 (MIC AMP) SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
MA-237 BOARD
no mark : CAMERA REC mode
J015
EXT MIC
L015 0μH :2520
L016 0μH
L017 1mH 2520
C015 100p SL
C016 1000p (MONO) 3300p (STEREO)
LN0015
CH. GND
CN015 7P (C-1)
MIC L
MIC R
MIC VCC
AU GND
SS GND
SIRCS SIG
SS 4.9V
TO MI-25 BOARD CN003
<See Page 4-58>
(B-4)
IC016
STEREO MIC AMP
IC016 LA7471M
(C-4)
IC015 NJM2118
IC015
MONO MIC AMP
(B-3)
Q015
AMP
Q015 2SB1218
MONO
SIGNAL PA
AUDI
REC
PB
09

el is

ive)

ive)

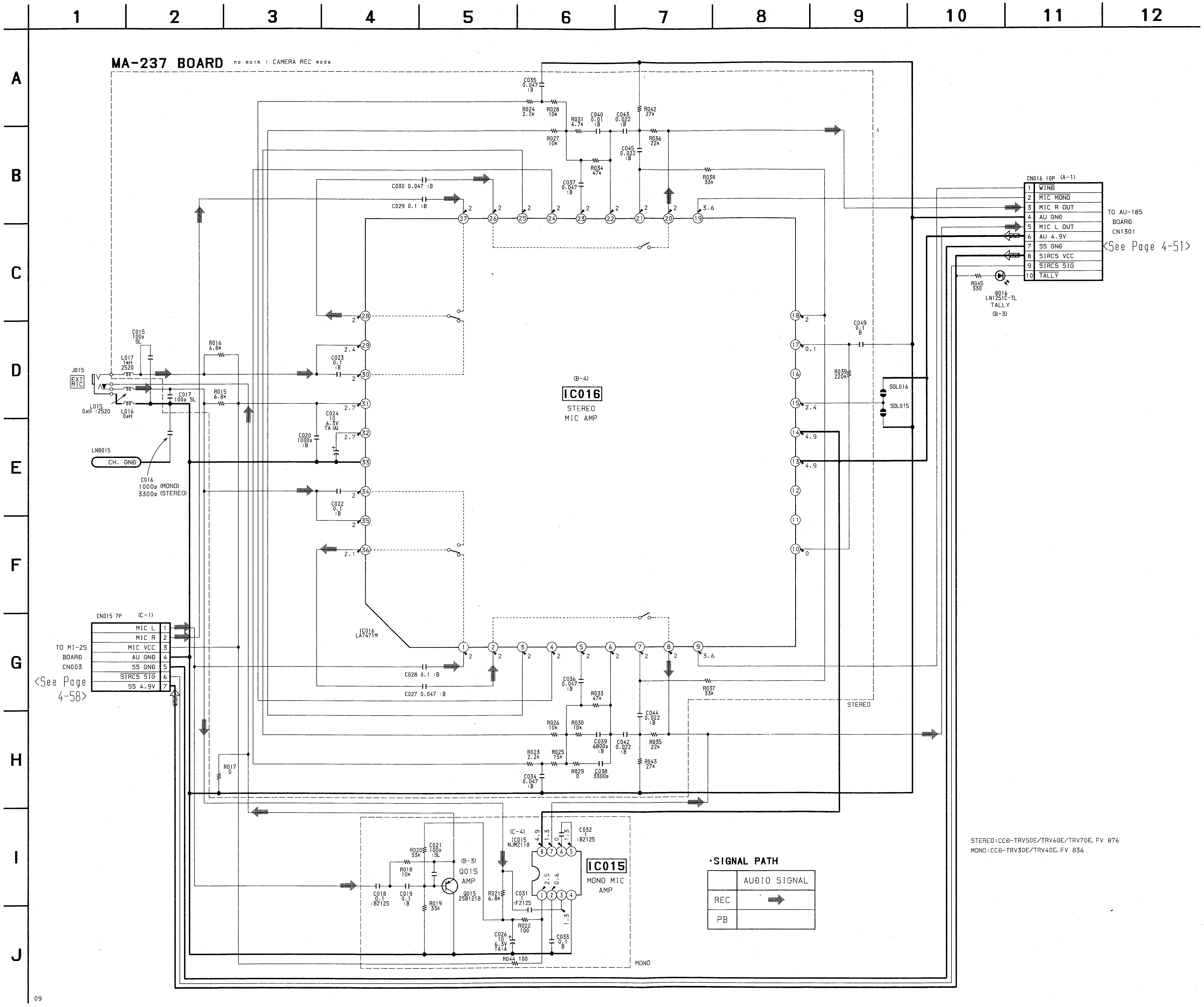
, Lens Drive,)
Shot Control)

p)

MA-237 (MIC AMP) SCHEMATIC DIAGRAM

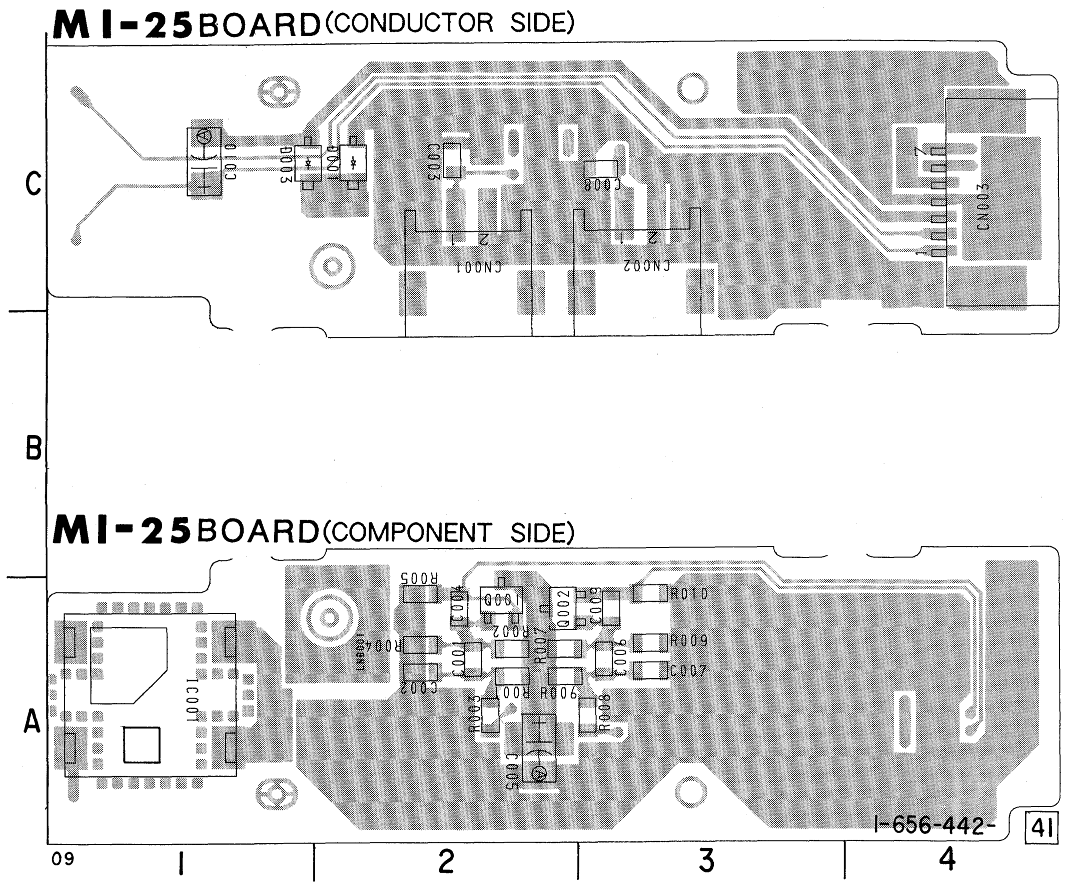
〈 〉: The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.

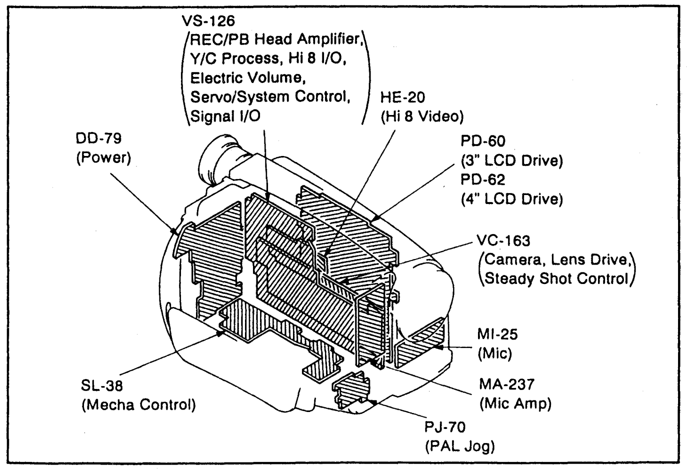
MA-237 BOARD	
C015	B-1
C016	D-4
C017	C-4
C018	B-3
C019	B-3
C020	B-4
C021	C-3
C022	B-4
C023	B-4
C024	B-4
C026	C-4
C027	B-4
C028	B-3
C029	B-4
C030	B-4
C031	C-4
C032	B-4
C033	C-4
C034	B-1
C035	B-1
C036	B-2
C037	B-1
C038	B-2
C039	B-2
C040	B-1
C042	A-2
C043	A-1
C044	A-2
C045	A-1
C049	A-4
CN015	C-1
CN016	A-1
D016	B-3
IC015	C-4
IC016	B-4
J015	C-2
L015	D-4
L016	D-4
L017	C-1
Q015	B-3
R015	C-4
R016	C-1
R017	C-3
R018	B-3
R019	B-4
R020	C-3
R021	C-4
R022	C-4
R023	B-1
R024	B-1
R025	B-1
R026	B-2
R027	B-1
R028	B-1
R029	B-2
R030	B-2
R031	B-1
R033	B-2
R034	B-1
R035	A-2
R036	A-1
R037	A-3
R038	A-4
R039	A-3
R042	A-1
R043	A-2
R044	C-4
R045	B-3


1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
I
J
MA-237 BOARD
no mark : CAMERA REC mode
IC016
STEREO
MIC AMP
(B-4)
IC016
LA7471M
IC015
MONO MIC
AMP
(C-4)
IC015
NJM2118
Q015
AMP
(B-3)
Q015
2SB1218
J015
EXT MIC
L015
0μH :2520
L016
0μH
L017
1mH
2520
LN0015
CH. GND
C016
1000p (MONO)
3300p (STEREO)
CN015 7P (C-1)
MIC L
MIC R
MIC VCC
AU GND
SS GND
SIRCS SIG
SS 4.9V
TO MI-25
BOARD
CN003
<See Page
4-58>
CN016 10P (A-1)
WIND
MIC MONO
MIC R OUT
AU GND
MIC L OUT
AU 4.9V
SS GND
SIRCS VCC
SIRCS SIG
TALLY
TO AU-185
BOARD
CN1301
<See Page 4-51>
R045
330
D016
LN1251C-TL
TALLY
(B-3)
SOL016
SOL015
STEREO
MONO
·SIGNAL PATH
AUDIO SIGNAL
REC
PB
STEREO:CCD-TRV50E/TRV60E/TRV70E, FV 876
MONO:CCD-TRV30E/TRV40E, FV 836
09

MI-25 (MIC) PRINTED WIRING BOARD

There are few cases that the part isn't mounted in this model is printed on this diagram.


MI-25 BOARD (CONDUCTOR SIDE)
MI-25 BOARD (COMPONENT SIDE)
C
B
A
C010
D003
D001
C003
C005
D008
CN001
CN002
CN003
R005
R010
R009
C007
C001
C002
C004
C006
C009
Q001
Q002
R001
R002
R003
R004
R006
R007
R008
LND001
IC001
1-656-442-
41
09
1
2
3
4

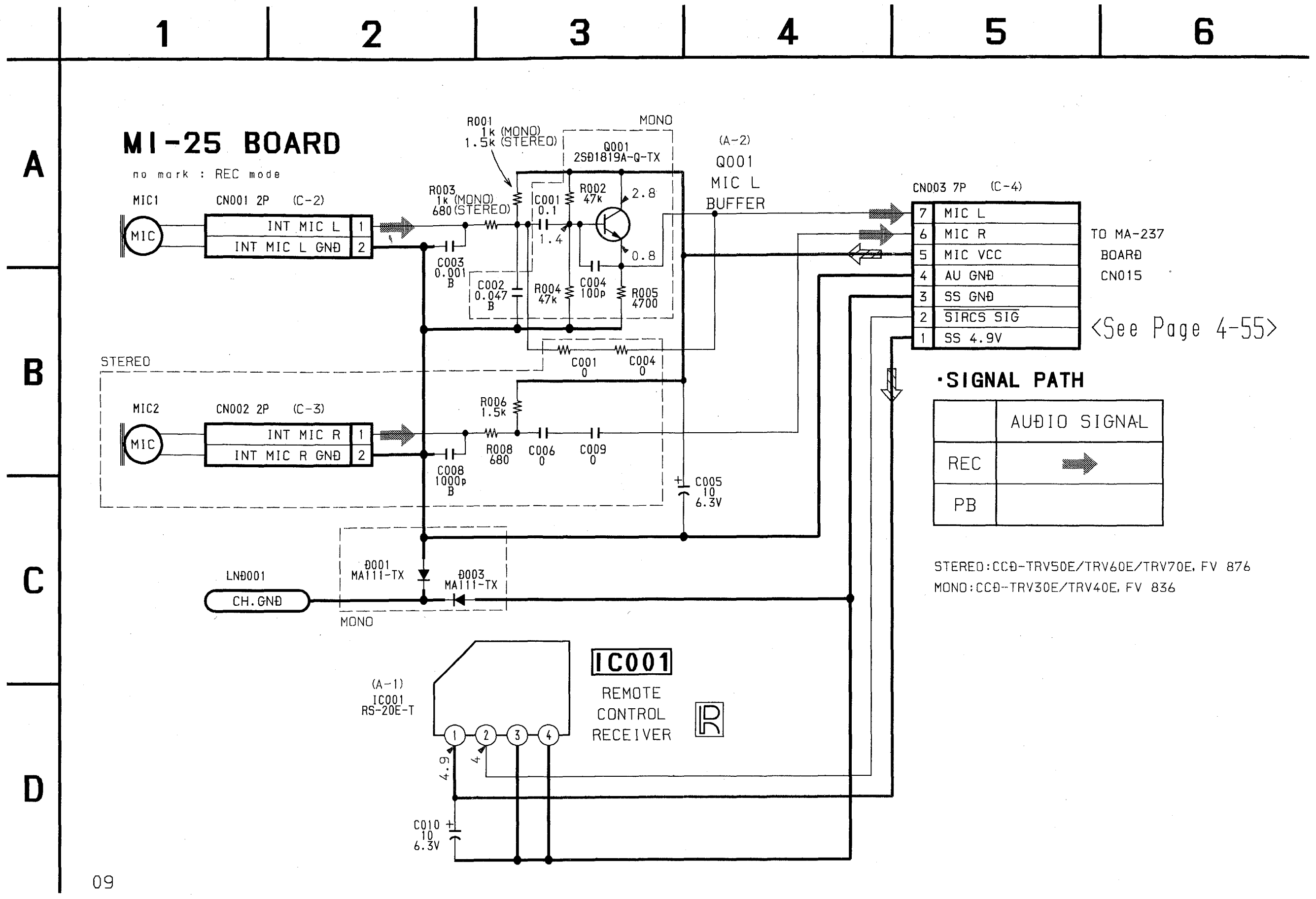

VS-126
REC/PB Head Amplifier,
Y/C Process, Hi 8 I/O,
Electric Volume,
Servo/System Control,
Signal I/O
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive,
Steady Shot Control)
MI-25
(Mic)
MA-237
(Mic Amp)
SL-38
(Mecha Control)
PJ-70
(PAL Jog)

MI-25 BOARD

C001	A-2
C002	A-2
C003	C-2
C004	A-2
C005	A-2
C006	A-3
C008	C-3
C009	A-3
C010	C-1
CN001	C-2
CN002	C-3
CN003	C-4
D001	C-2
D003	C-1
IC001	A-1
Q001	A-2
R001	A-2
R002	A-2
R003	A-2
R004	A-2
R005	A-2
R006	A-2
R008	A-3

MI-25 (MIC) SCHEMATIC DIAGRAM

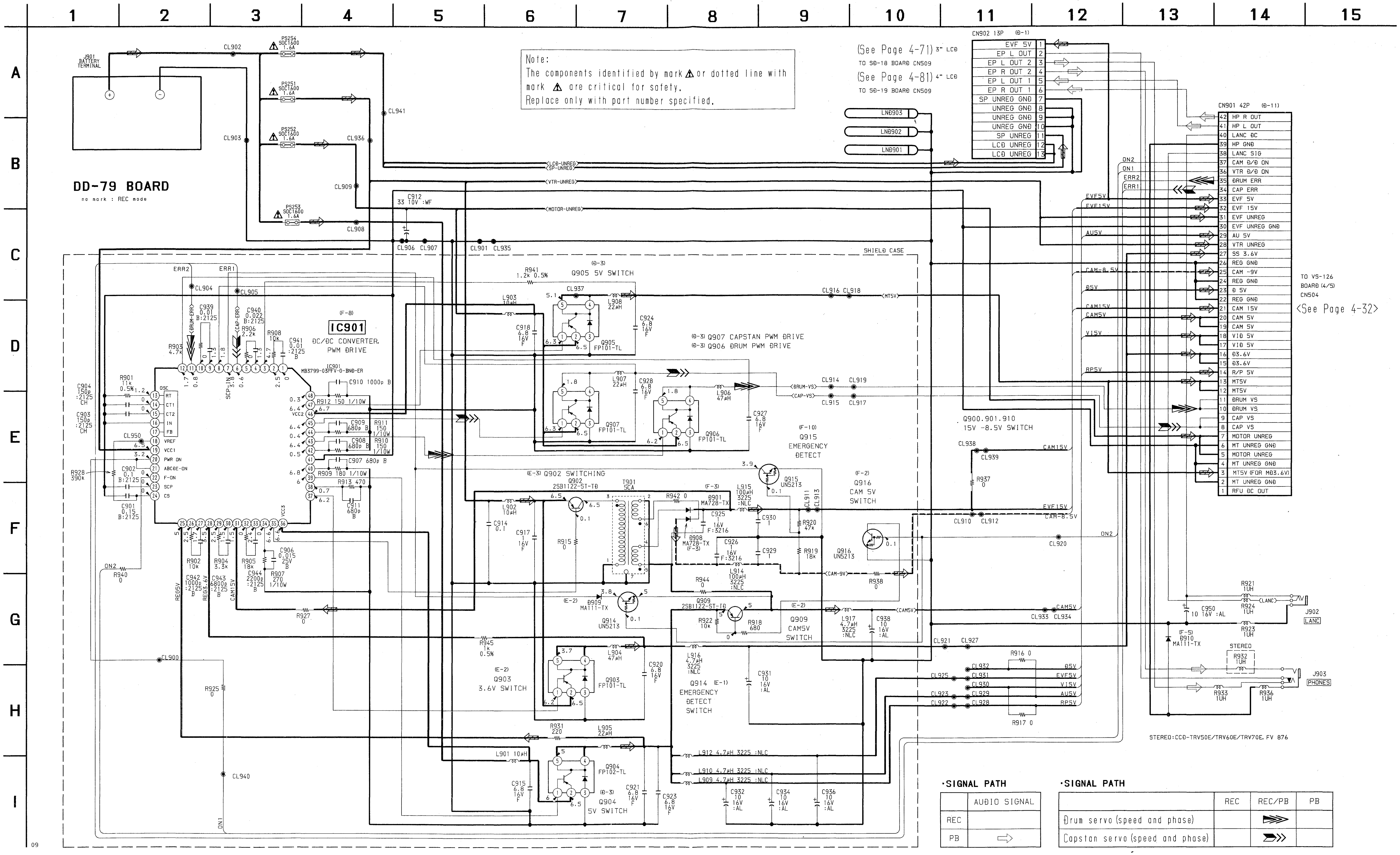
< >: The pages above correspond to CCD-TRV30E/TRV50E/TRV70E SUPPLEMENT-1.

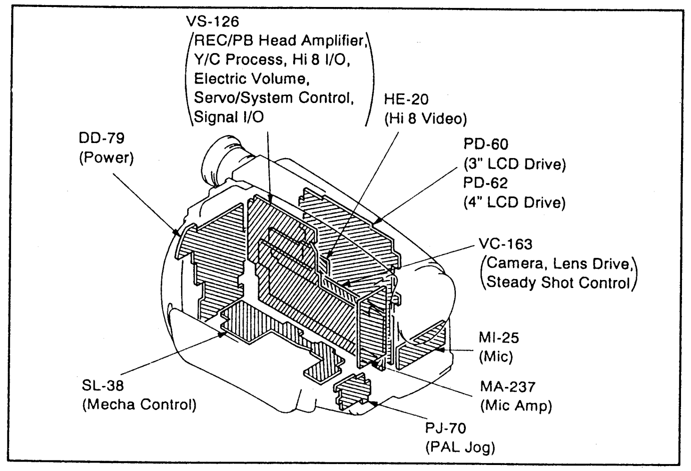

1
2
3
4
5
6
A
B
C
D
MI-25 BOARD
no mark : REC mode
MIC1
CN001 2P (C-2)
INT MIC L 1
INT MIC L GND 2
MIC
R001 1k (MONO) 1.5k (STEREO)
MONO
Q001 2SD1819A-Q-TX
R003 1k (MONO) 680 (STEREO)
C001 0.1
R002 47k
2.8
1.4
0.8
C003 0.001 B
C002 0.047 B
R004 47k
C004 100p
R005 4700
(A-2)
Q001
MIC L
BUFFER
STEREO
C001 0
C004 0
MIC2
CN002 2P (C-3)
INT MIC R 1
INT MIC R GND 2
R006 1.5k
R008 680
C006 0
C009 0
C008 1000p B
C005 10 6.3V
LND001
CH.GND
D001 MA111-TX
D003 MA111-TX
MONO
CN003 7P (C-4)
7 MIC L
6 MIC R
5 MIC VCC
4 AU GND
3 SS GND
2 SIRCS SIG
1 SS 4.9V
TO MA-237 BOARD CN015
<See Page 4-55>
·SIGNAL PATH
AUDIO SIGNAL
REC
PB
STEREO:CCD-TRV50E/TRV60E/TRV70E, FV 876
MONO:CCD-TRV30E/TRV40E, FV 836
(A-1)
IC001
RS-20E-T
IC001
REMOTE CONTROL RECEIVER
R
1
2
3
4
4.9
4
C010 10 6.3V
09

< >: The pages above correspond to CCD-TRV30E/TRV50E/TRV70E
SUPPLEMENT-1.

( ): The pages above correspond to SERVICE MANUAL (Original).

DD-79 (POWER) SCHEMATIC DIAGRAM


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H I
J901 BATTERY TERMINAL
DD-79 BOARD
no mark : REC mode
PS254 SOC1600 1.6A
PS251 SOC1600 1.6A
PS252 SOC1600 1.6A
PS253 SOC1600 1.6A
CL902 CL903 CL941 CL936 CL909 CL908
C912 33 10V :WF
CL906 CL907 CL901 CL935
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.
<LCD-UNREG> <SP-UNREG> <VTR-UNREG> <MOTOR-UNREG>
SHIELD CASE
IC901 DC/DC CONVERTER, PWM DRIVE
IC901 MB3799-03PFV-G-BND-ER
Q905 5V SWITCH
Q905 FP101-TL
L908 22μH
L903 10μH
C918 6.8 16V F
C924 6.8 16V F
Q907 CAPSTAN PWM DRIVE
Q906 DRUM PWM DRIVE
Q907 FP101-TL
L907 22μH
Q906 FP101-TL
L906 47μH
<DRUM-VS> <CAP-VS>
CL914 CL919 CL915 CL917
CL916 CL918 <MT5V>
Q915 EMERGENCY DETECT
Q915 UN5213
Q900.901.910 15V -8.5V SWITCH
Q916 CAM 5V SWITCH
Q916 UN5213
Q902 SWITCHING
Q902 2SB1122-ST-TD
T901 SCA
D901 MA728-TX
D908 MA728-TX
L915 100μH 3225 :NLC
L914 100μH 3225 :NLC
D909 MA111-TX
Q914 UN5213
Q909 2SB1122-ST-TD
Q909 CAM5V SWITCH
L917 4.7μH 3225 :NLC
Q903 3.6V SWITCH
Q903 FP101-TL
L904 47μH
L916 4.7μH 3225 :NLC
Q914 EMERGENCY DETECT SWITCH
Q904 5V SWITCH
Q904 FP102-TL
L901 10μH
L905 22μH
L912 4.7μH 3225 :NLC
L910 4.7μH 3225 :NLC
L909 4.7μH 3225 :NLC
CL920 CL921 CL927 CL933 CL934 CL910 CL912 CL938 CL939 CL940 CL900
CL925 CL923 CL922 CL932 CL931 CL930 CL929 CL928
D5V EVF5V VI5V AU5V RP5V
R916 0 R917 0
(See Page 4-71) 3" LCD TO SD-18 BOARD CN509
(See Page 4-81) 4" LCD TO SD-19 BOARD CN509
CN902 13P
1 EVF 5V
2 EP L OUT
3 EP L OUT 2
4 EP R OUT 2
5 EP L OUT 1
6 EP R OUT 1
7 SP UNREG GND
8 UNREG GND
9 UNREG GND
10 UNREG GND
11 SP UNREG
12 LCD UNREG
13 LCD UNREG
LND903 LND902 LND901
CN901 42P
42 HP R OUT
41 HP L OUT
40 LANC DC
39 HP GND
38 LANC SIG
37 CAM D/D ON
36 VTR D/D ON
35 DRUM ERR
34 CAP ERR
33 EVF 5V
32 EVF 15V
31 EVF UNREG
30 EVF UNREG GND
29 AU 5V
28 VTR UNREG
27 SS 3.6V
26 REG GND
25 CAM -9V
24 REG GND
23 D 5V
22 REG GND
21 CAM 15V
20 CAM 5V
19 CAM 5V
18 VID 5V
17 VID 5V
16 D3.6V
15 D3.6V
14 R/P 5V
13 MT5V
12 MT5V
11 DRUM VS
10 DRUM VS
9 CAP VS
8 CAP VS
7 MOTOR UNREG
6 MT UNREG GND
5 MOTOR UNREG
4 MT UNREG GND
3 MT5V (FOR MD3.6V)
2 MT UNREG GND
1 RFU DC OUT
TO VS-126 BOARD CN504
<See Page 4-32>
J902 LANC
C950 10 16V :AL
D910 MA111-TX
R921 1UH R924 1UH R923 1UH
STEREO R932 1UH
R933 1UH R936 1UH
J903 PHONES
STEREO:CCD-TRV50E/TRV60E/TRV70E, FV 876
·SIGNAL PATH
AUDIO SIGNAL
REC
PB ⇨
·SIGNAL PATH
REC REC/PB PB
Drum servo (speed and phase)
Capstan servo (speed and phase)
09


VS-126
(REC/PB Head Amplifier,
Y/C Process, Hi 8 I/O,
Electric Volume,
Servo/System Control,
Signal I/O)
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive,
Steady Shot Control)
MI-25
(Mic)
SL-38
(Mecha Control)
MA-237
(Mic Amp)
PJ-70
(PAL Jog)

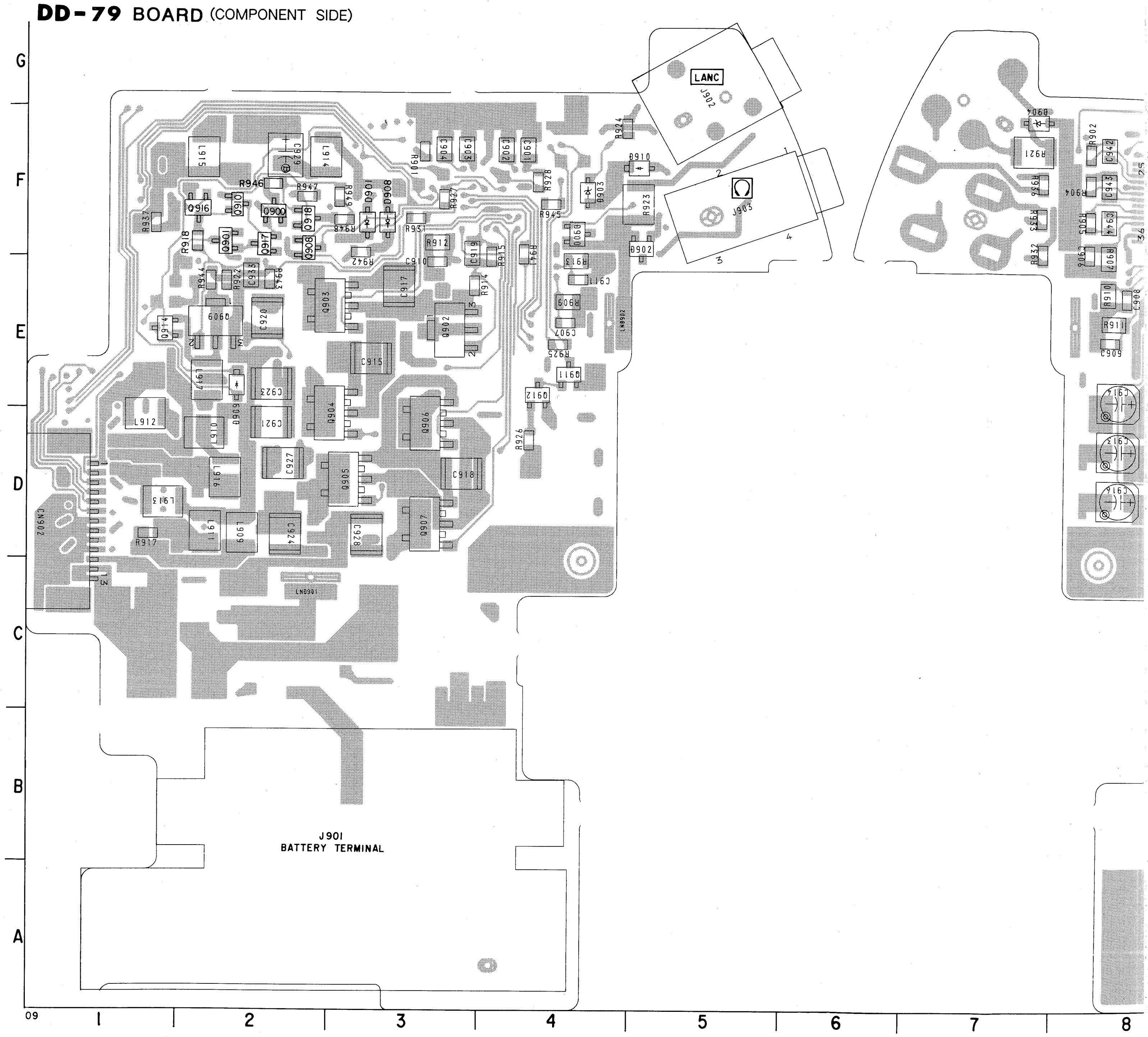
DD-79 BOARD

C901	F-4
C902	F-4
C903	F-3
C904	F-3
C906	F-8
C907	E-4
C908	E-8
C909	E-8
C910	E-3
C911	E-4
C912	C-10
C914	E-8
C915	E-3
C917	E-3
C918	D-3
C920	E-2
C921	D-2
C923	E-2
C924	D-2
C925	F-10
C926	F-9
C927	D-2
C928	D-3
C929	F-2
C930	F-10
C931	D-10
C932	D-10
C934	E-10
C936	E-10
C938	E-10
C939	F-9
C940	F-9
C941	F-9
C942	F-8
C943	F-8
C944	F-8
C950	F-10
CN901	D-11
CN902	D-1
D901	F-3
D908	F-3
D909	E-2
D910	F-5
IC901	F-8
J901	A-2
J902	G-5
J903	F-5
L901	D-8
L902	E-9
L903	D-8
L904	E-10
L905	E-10
L906	E-9
L907	D-9
L908	D-10
L909	D-2
L910	D-2
L912	D-1
L914	F-2
L915	F-2
L916	D-2
L917	E-2
PS251	B-9
PS252	B-9
PS253	B-10
PS254	B-10
Q902	E-3
Q903	E-2
Q904	D-3
Q905	D-3
Q906	D-3
Q907	D-3
Q909	E-2
Q914	E-1
Q915	F-10
Q916	F-2
R901	F-3
R902	F-8
R903	F-9
R904	F-8
R905	F-8
R906	F-9
R907	F-8
R908	F-9
R909	E-4
R910	E-8
R911	E-8
R912	F-3
R913	E-4
R915	E-4
R916	D-11
R917	D-1
R918	F-2
R919	F-9
R920	F-9
R921	F-7
R922	E-2
R923	F-5
R924	F-4
R925	E-4
R927	F-3
R928	F-4
R931	F-3
R932	F-7
R933	F-7
R936	F-7
R937	F-1
R938	F-10
R940	F-9
R941	E-4
R942	F-3
R944	E-2
R945	F-4
T901	E-9

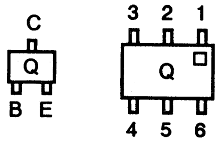
DD-79 (POWER) PRINTED WIRING BOARD

There are few cases that the part isn't mounted in this model is printed on this diagram.

DD-79 BOARD (COMPONENT SIDE)


G
F
E
D
C
B
A
09
1
2
3
4
5
6
7
8
LANC
J902
J903
J901
BATTERY TERMINAL
CN902
IC901
T901
Q902
Q903
Q904
Q905
Q906
Q907
Q909
Q914
Q916
L912
L917
C915
C917
C918
C920
C921
C927
R917
R918
R937
R946
R947
R945
R923
R921
R926

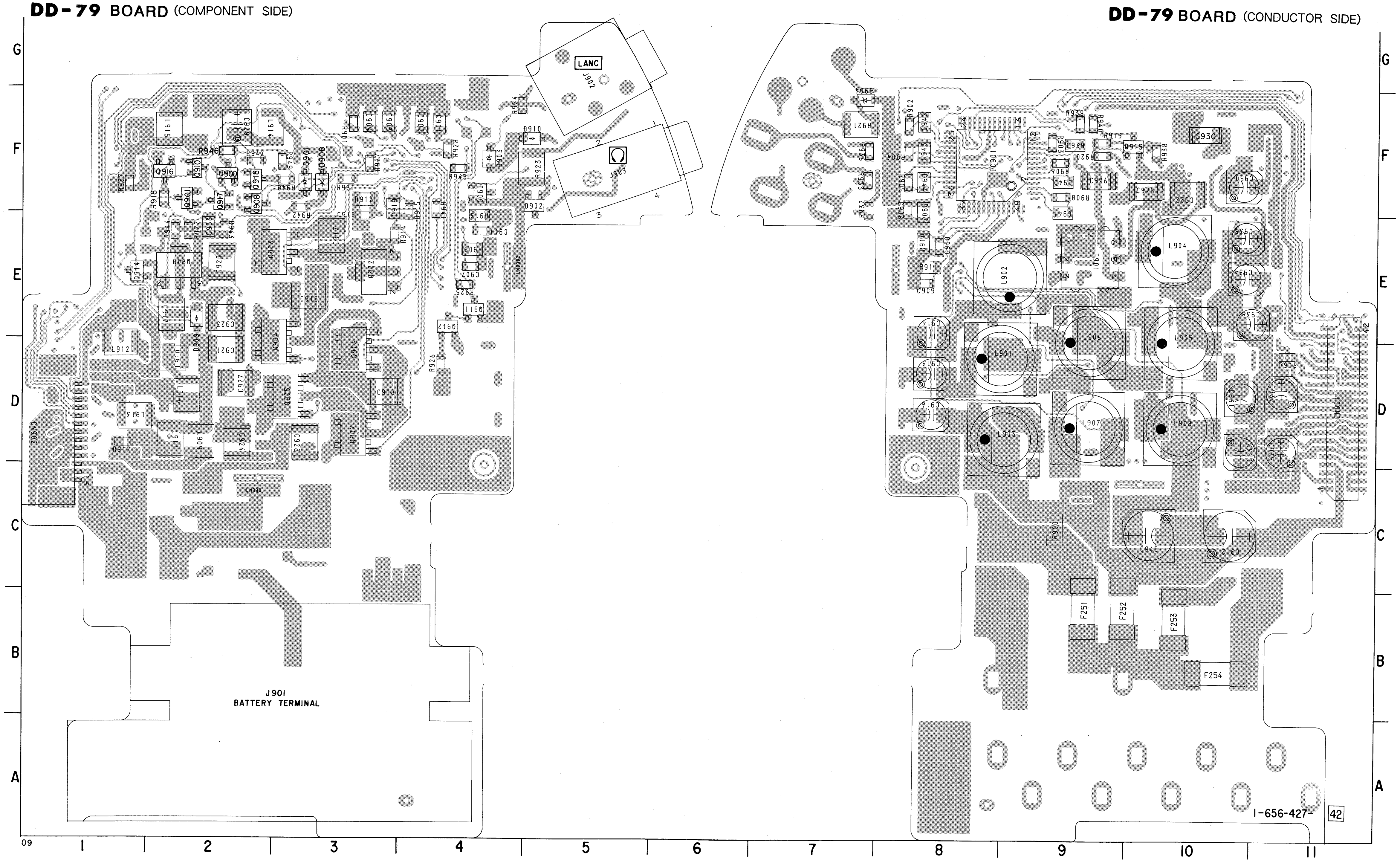
- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor


C
Q
B E
3 2 1
Q
4 5 6

R933	F-7
R936	F-7
R937	F-1
R938	F-10
R940	F-9
R941	E-4
R942	F-3
R944	E-2
R945	F-4
T901	E-9

DD-79 (POWER) PRINTED WIRING BOARD

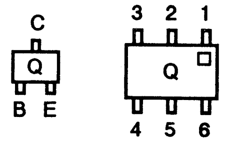
There are few cases that the part isn't mounted in this model is printed on this diagram.


DD-79 BOARD (COMPONENT SIDE)

DD-79 BOARD (CONDUCTOR SIDE)

G
F
E
D
C
B
A
09
1
2
3
4
5
6
7
8
9
10
11
LANC
J902
J903
J901
BATTERY TERMINAL
CN902
CN901
L901
L902
L903
L904
L905
L906
L907
L908
T901
F251
F252
F253
F254
C945
1-656-427-
42

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor



C
Q
B E
3 2 1
Q
4 5 6

SECTION 5
REPAIR PARTS LIST

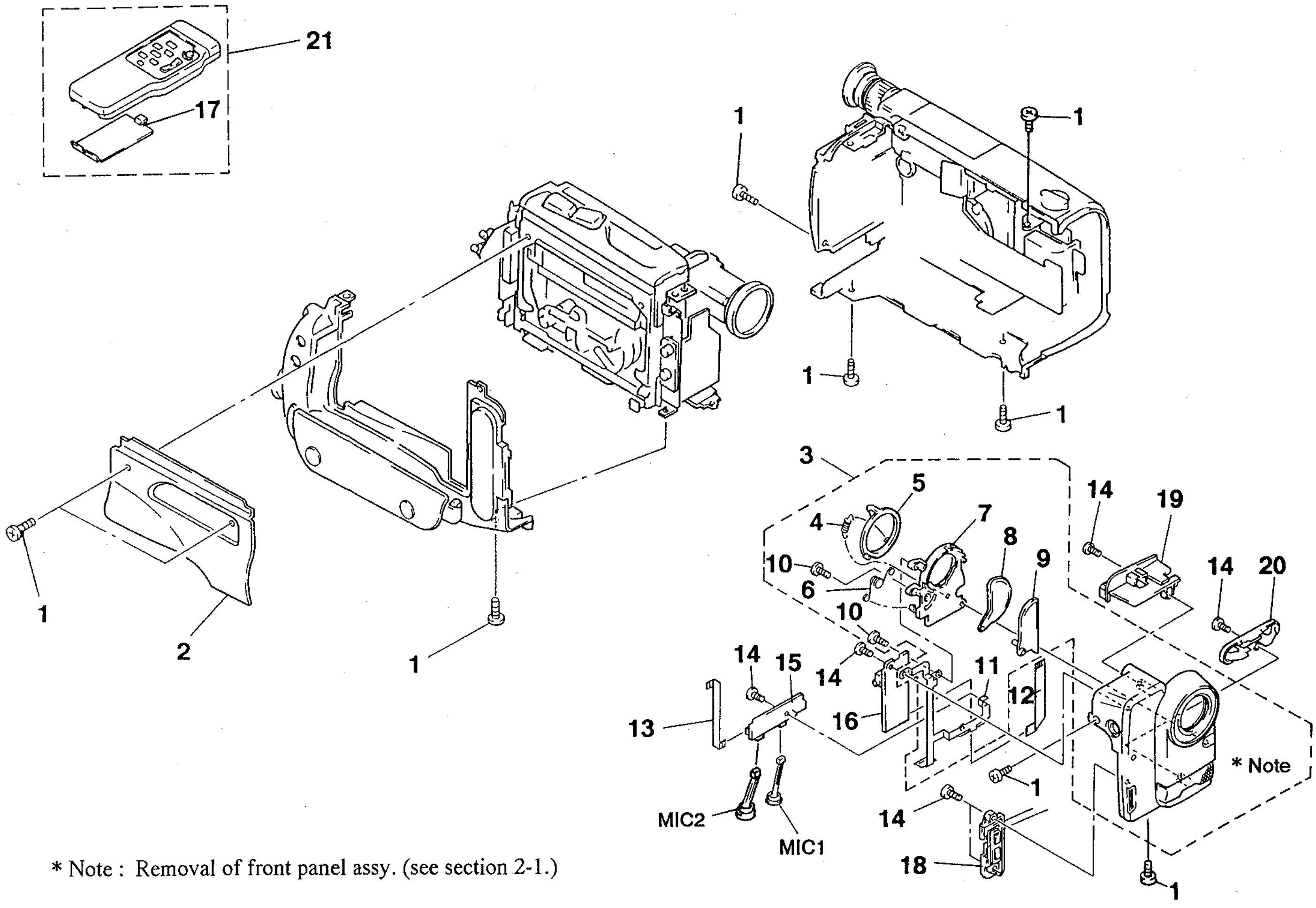
5-1. EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.
- Australian model is abbreviated as AUS. Hong Kong model is abbreviated as HK.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

5-1-1. FRONT PANEL BLOCK ASSEMBLY

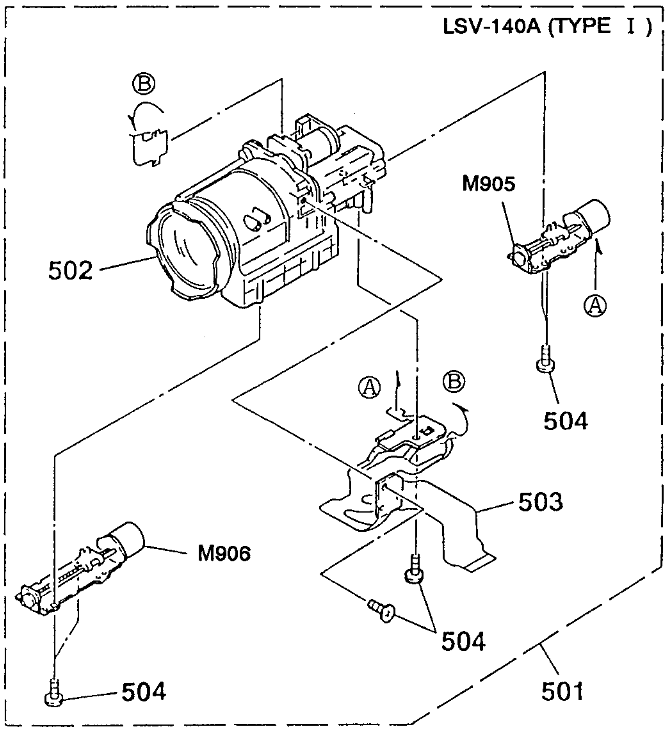


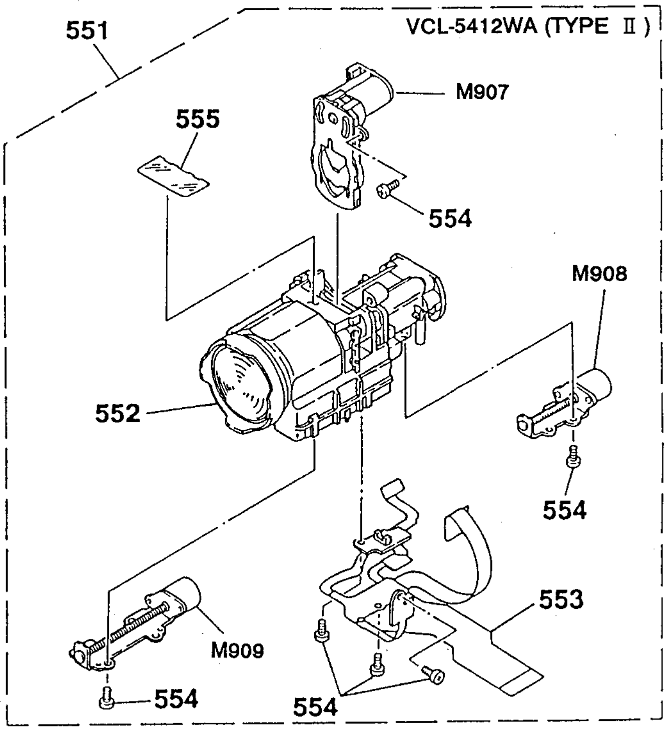
* Note : Removal of front panel assy. (see section 2-1.)

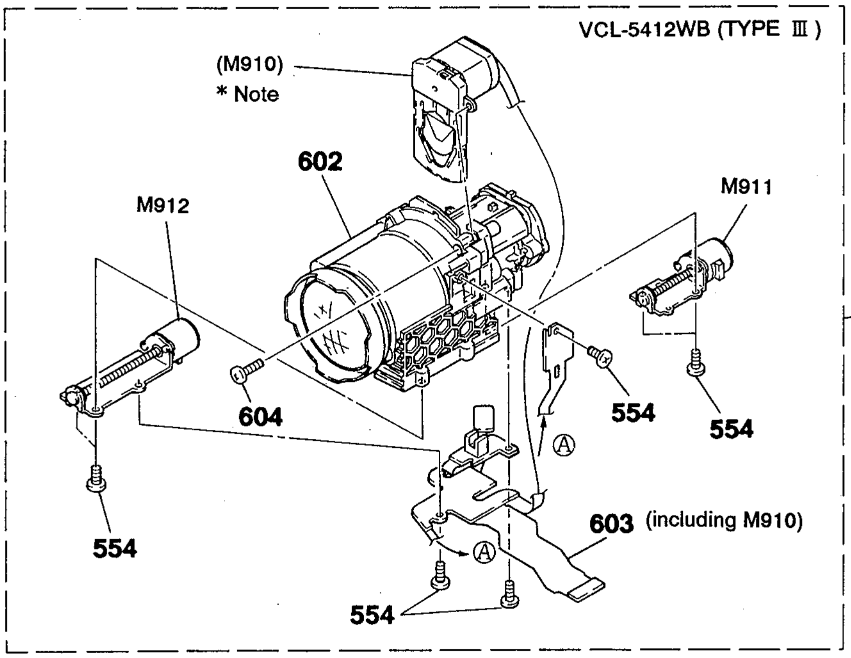
Ref. No.	Part No.	Description	Remark
1	3-719-381-01	SCREW (M2X4)	
2	X-3945-039-1	LID ASSY, CASSETTE (TRV30E/TRV40E/TRV50E)	
2	X-3945-106-1	LID ASSY (H), CASSETTE (TRV60E/TRV70E)	
3	X-3945-004-1	PANEL ASSY, FRONT (TRV30E)	
3	X-3945-092-1	PANEL ASSY, FRONT (TRV50E/TRV60E/TRV70E)	
3	X-3945-147-1	PANEL ASSY, FRONT (TRV40E)	
4	3-307-378-00	SPRING, TENSION	
5	3-963-519-01	RING, DRIVING	
6	3-961-823-01	SPRING, L COVER	
7	3-963-518-01	RETAINER, LC	
8	3-963-517-01	LENS (2), COVER	
9	3-963-516-01	LENS (1), COVER	
10	3-719-601-01	SCREW (B2X5), TAPPING	
* 11	3-963-581-01	PLATE, GROUND, MICROPHONE	
12	1-775-961-11	CABLE, FLAT (FFC-199)	

Ref. No.	Part No.	Description	Remark
13	1-769-730-11	CABLE, FLAT (FFC-154)	
14	3-948-339-01	SCREW, TAPPING	
15	A-7056-686-A	MI-25PV (ST) BOARD, COMPLETE (TRV50E/TRV60E/TRV70E)	
15	A-7072-366-A	MI-25PV (MO) BOARD, COMPLETE (TRV30E/TRV40E)	
16	A-7056-685-A	MA-237PV (ST) BOARD, COMPLETE (TRV50E/TRV60E/TRV70E)	
16	A-7072-365-A	MA-237PV (MO) BOARD, COMPLETE (TRV30E/TRV40E)	
17	3-958-131-01	LID, BATTERY CASE (for RMT-708)	
18	1-473-165-11	SWITCH BLOCK, CONTROL (ZOOM)	
19	3-963-524-01	BLIND, F PANEL	
20	3-963-520-01	HOLDER, MICROPHONE	
21	1-467-574-21	REMOTE COMMANDER (RMT-708)	
MIC1	1-542-259-11	MICROPHONE, CAP	
MIC2	1-542-259-11	MICROPHONE, CAP	

5-1-11. ZOOM LENS ASSEMBLIES (LSV-140A) (VCL-5412WA) (VCL-5412WB)


LSV-140A (TYPE I)
Ⓑ
M905
502
Ⓐ
Ⓐ
Ⓑ
504
503
M906
504
504
501


551
VCL-5412WA (TYPE II)
M907
555
554
M908
552
554
553
M909
554
554

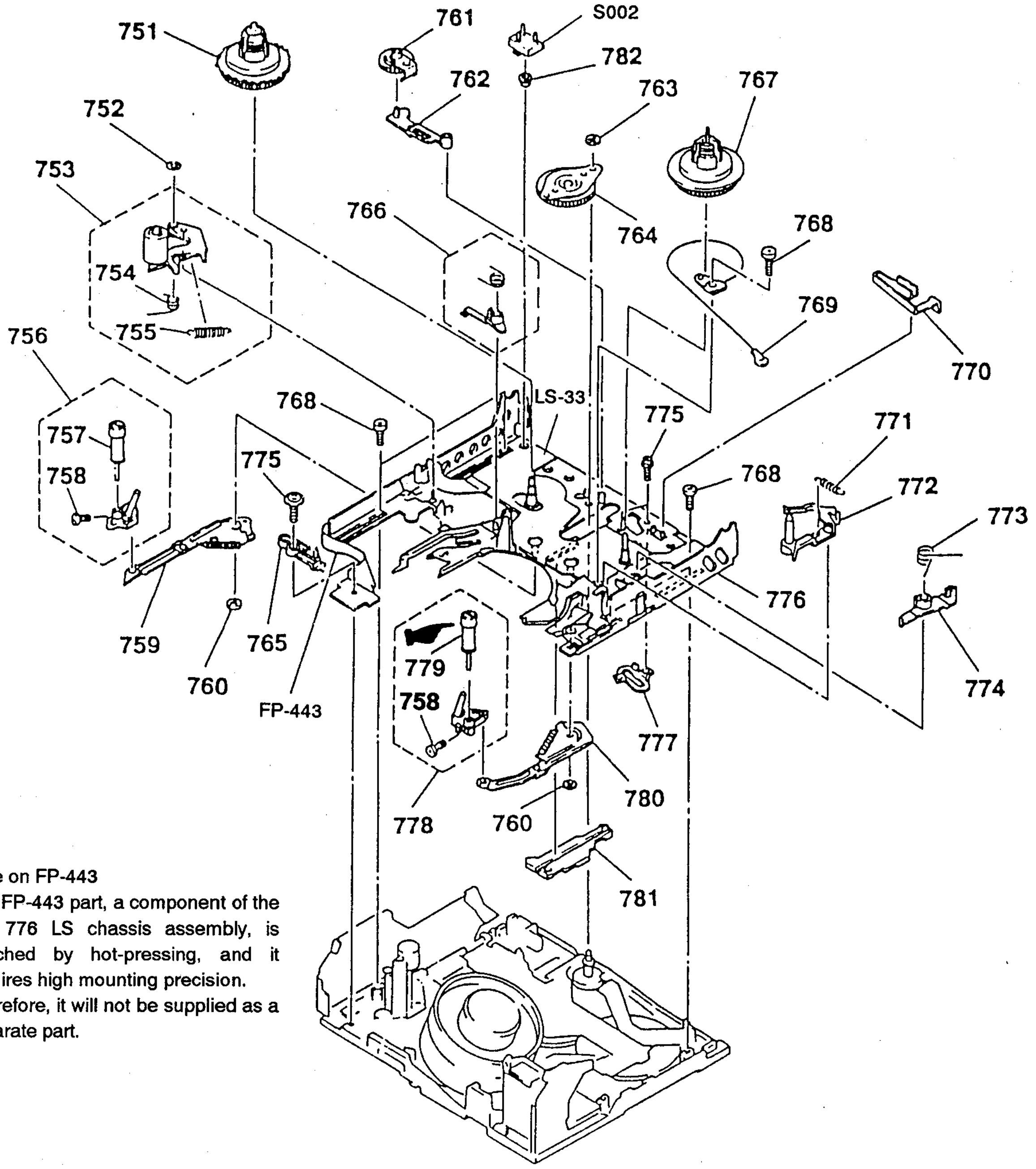

VCL-5412WB (TYPE III)
(M910)
* Note
602
M912
M911
604
554
554
Ⓐ
554
603 (including M910)
Ⓐ
554

601 ☛
ADD
(Added Lens for this time)

* Note : IRIS meter (M910) is not supplied individually.
When replacing, use F.P.C. assy (Ref. No. 603).

Ref. No.	Part No.	Description	Remark
501	8-848-704-01	DEVICE, LENS LSV-140A (TYPE I)	
502	A-4910-598-A	DEVICE ASSY, LSV-140A (RP)	
503	A-4915-338-A	FLEXIBLE MOUNT	
504	3-713-791-41	SCREW (M1.7X5), TAPPING, P2	
M905	1-698-364-01	MOTOR ASSY, FOCUS	
M906	1-698-363-01	MOTOR ASSY, ZOOM	
551	1-547-716-11	LENS, ZOOM (VCL-5412WA)(TYPE II)	
552	3-708-891-01	TUBE, MIRROR ASSY	
553	3-708-890-01	FLEXIBLE, MAIN	
554	3-708-302-01	SCREW (BT3 P1.7X4C)	
555	3-708-886-01	COVER, IG	
M907	3-708-888-01	METER, IG (IRIS)	
M908	3-708-889-01	MOTOR ASSY, FOCUS	
M909	3-708-887-01	MOTOR ASSY, ZOOM	
601	1-547-739-12	LENS, ZOOM (VCL-5412WB)(TYPE III)	☛
602	3-708-900-02	TUBE, MIRROR ASSY	☛
603	3-709-030-01	F.P.C. ASSY	☛
604	3-708-617-01	SCREW (BT3 P1.7X7C)	☛
M911	3-708-897-02	MOTOR ASSY, FOCUS	☛
M912	3-708-896-02	MOTOR ASSY, ZOOM	☛

5-1-13. LS CHASSIS ASSEMBLY


751
761
S002
782
762
763
767
752
753
766
764
768
754
769
755
756
770
768
LS-33
775
771
757
775
768
772
758
773
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759
765
779
760
FP-443
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774
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780
778
760
781

Note on FP-443
The FP-443 part, a component of the No. 776 LS chassis assembly, is attached by hot-pressing, and it requires high mounting precision. Therefore, it will not be supplied as a separate part.

Ref. No.	Part No.	Description	Remark
751	X-3941-274-1	TABLE ASSY, REEL, T	
752	3-331-007-21	WASHER	
753	X-3941-271-5	ARM ASSY, PINCH	
754	3-945-743-01	SPRING, TORSION	
755	3-945-783-01	SPRING, TENSION	
756	A-7040-307-A	GUIDE (BASE)(T) BLOCK ASSY	
757	X-3941-424-1	ROLLER ASSY, TG6	
758	3-947-504-01	SCREW (M1.2X2)	
759	X-3941-267-1	ARM (T) ASSY, GUIDE	
760	3-669-465-01	WASHER (1.5), STOPPER	
761	X-3941-273-1	SOFT ASSY, T	
762	3-945-753-01	ARM, T SOFT	
763	3-726-829-01	WASHER, STOPPER	
764	X-3941-279-5	GEAR ASSY, GOOSENECK	
765	3-947-644-01	RETAINER, TG5 (BASE)	
766	A-7040-321-A	CLAW BLOCK ASSY, T HARD	
767	X-3944-116-1	TABLE ASSY, S REEL	
768	3-945-756-01	SCREW (M1.4X3)	
769	X-3941-277-1	STRING BLOCK ASSY	
770	3-945-801-01	BRAKE, S SOFT	
771	3-954-327-01	SPRING, TENSION	
772	X-3941-276-1	TG1 ASSY	
773	3-945-752-01	SPRING, TORSION	
774	3-945-799-01	BRAKE, S HARD	
775	3-947-503-01	SCREW (M1.4X2.5)	
776	X-3943-307-1	CHASSIS ASSY, LS	
777	3-945-784-01	PLATE, CAM, LS	
778	A-7040-323-A	GUIDE (BASE)(S) BLOCK ASSY	
779	X-3944-648-1	ROLLER ASSY (3), TG3	
780	X-3941-266-1	ARM (S) ASSY, GUIDE	
781	3-945-837-01	SLIDER, GL	
782	3-949-881-01	SLEEVE	
S002	1-572-987-11	SWITCH, PUSH (3 KEY) (REC PROOF, ME/MP, MP/MP-HG)	

AU-185

5-2. ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA..., uPB...: μPB..., uPC...: μPC..., uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH
- Australian model is abbreviated as AUS.
  Hong Kong model is abbreviated as HK.

Ref. No.	Part No.	Description				Remark
	A-7066-579-A	AU-185PV (MO) BOARD, COMPLETE				
		*****************************				
						(TRV30E/TRV40E)
	A-7066-678-A	AU-185PV (ST) BOARD, COMPLETE				
		*****************************				
						(TRV50E/TRV60E/TRV70E)
		< CAPACITOR >				
C1301	1-124-779-00	ELECT CHIP	10uF	20%	16V	
						(TRV50E/TRV60E/TRV70E)
C1302	1-124-779-00	ELECT CHIP	10uF	20%	16V	
C1305	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	
C1306	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	
						(TRV50E/TRV60E/TRV70E)
C1307	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	
						(TRV50E/TRV60E/TRV70E)
C1308	1-126-607-11	ELECT CHIP	47uF	20%	4V	
C1309	1-126-607-11	ELECT CHIP	47uF	20%	4V	
						(TRV50E/TRV60E/TRV70E)
C1313	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1314	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1315	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C1316	1-126-205-11	ELECT CHIP	47uF	20%	6.3V	
C1317	1-126-607-11	ELECT CHIP	47uF	20%	4V	
C1318	1-126-207-11	ELECT CHIP	33uF	20%	4V	
C1319	1-126-205-11	ELECT CHIP	47uF	20%	6.3V	
C1320	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C1321	1-126-209-11	ELECT	100uF	20%	4V	
C1322	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
						(TRV30E/TRV40E)
C1322	1-124-779-00	ELECT CHIP	10uF	20%	16V	
						(TRV50E/TRV60E/TRV70E)
C1323	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
						(TRV50E/TRV60E/TRV70E)
C1324	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	
C1326	1-165-320-11	CERAMIC CHIP	0.47uF	10%	16V	
						(TRV50E/TRV60E/TRV70E)
C1328	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
						(TRV50E/TRV60E/TRV70E)
C1329	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	
						(TRV50E/TRV60E/TRV70E)
C1330	1-126-607-11	ELECT CHIP	47uF	20%	4V	
						(TRV50E/TRV60E/TRV70E)
C1331	1-165-320-11	CERAMIC CHIP	0.47uF	10%	16V	
C1332	1-126-601-11	ELECT CHIP	2.2uF	20%	50V	
						(TRV50E/TRV60E/TRV70E)
C1333	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1334	1-126-607-11	ELECT CHIP	47uF	20%	4V	
C1335	1-165-320-11	CERAMIC CHIP	0.47uF	10%	16V	
						(TRV50E/TRV60E/TRV70E)
C1336	1-126-601-11	ELECT CHIP	2.2uF	20%	50V	
C1337	1-126-601-11	ELECT CHIP	2.2uF	20%	50V	
						(TRV50E/TRV60E/TRV70E)
C1338	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1339	1-165-320-11	CERAMIC CHIP	0.47uF	10%	16V	
C1340	1-126-601-11	ELECT CHIP	2.2uF	20%	50V	
C1341	1-126-602-11	ELECT CHIP	3.3uF	20%	50V	
C1342	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C1344	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1345	1-126-602-11	ELECT CHIP	3.3uF	20%	50V	
						(TRV50E/TRV60E/TRV70E)
C1346	1-163-209-00	CERAMIC CHIP	0.0015uF	10%	50V	
						(TRV50E/TRV60E/TRV70E)
C1347	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
						(TRV30E/TRV40E)
C1348	1-124-779-00	ELECT CHIP	10uF	20%	16V	
C1350	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V	
C1351	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
						(TRV50E/TRV60E/TRV70E)
C1352	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C1358	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C1373	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
						(TRV30E/TRV40E)
C1379	1-126-607-11	ELECT CHIP	47uF	20%	4V	
						(TRV50E/TRV60E/TRV70E)
		< CONNECTOR >				
CN1301	1-691-489-11	CONNECTOR, FFC/FPC 10P				
* CN1302	1-691-933-11	CONNECTOR, BOARD TO BOARD 34P				
		< DIODE >				
D1303	8-719-404-49	DIODE	MA111			(TRV50E/TRV60E/TRV70E)
D1306	8-719-052-33	DIODE	MAZV082DFL			(TRV50E/TRV60E/TRV70E)
		< IC >				
IC130	8-759-330-00	IC	AN3988NFHP-EB			(TRV50E/TRV60E/TRV70E)
IC130	8-759-338-93	IC	AN3996FHP-EB			(TRV30E/TRV40E)

Ref. No.	Part No.	Description	Remark
		< COIL >	
L1302	1-216-295-91	CONDUCTOR, CHIP (2012)	(TRV30E/TRV40E)
		< TRANSISTOR >	
Q1301	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV50E/TRV60E/TRV70E)
Q1302	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q1303	8-729-402-42	TRANSISTOR UN5213	
Q1304	8-729-403-35	TRANSISTOR UN5113	
Q1305	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV50E/TRV60E/TRV70E)
Q1306	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q1307	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV50E/TRV60E/TRV70E)
Q1308	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q1309	8-729-420-53	TRANSISTOR UN5115	
Q1313	8-729-420-53	TRANSISTOR UN5115	
Q1314	8-729-402-42	TRANSISTOR UN5213	(TRV50E/TRV60E/TRV70E)
		< RESISTOR >	
R1301	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1302	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1303	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1304	1-216-817-11	METAL CHIP 470 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1306	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV30E/TRV40E)
R1307	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1308	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1309	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1310	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R1313	1-216-810-11	METAL CHIP 120 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1314	1-216-803-11	METAL CHIP 33 5% 1/16W	(TRV30E/TRV40E)
R1314	1-216-810-11	METAL CHIP 120 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1316	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R1317	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R1318	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1318	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV30E/TRV40E)
R1319	1-216-853-11	METAL CHIP 470K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1319	1-216-857-11	METAL CHIP 1M 5% 1/16W	(TRV30E/TRV40E)

Ref. No.	Part No.	Description	Remark
R1320	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1321	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1322	1-216-824-11	METAL CHIP 1.8K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1323	1-216-813-11	METAL CHIP 220 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1323	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	(TRV30E/TRV40E)
R1324	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R1325	1-216-843-11	METAL CHIP 68K 5% 1/16W	(TRV30E/TRV40E)
R1325	1-216-851-11	METAL CHIP 330K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1326	1-216-851-11	METAL CHIP 330K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1328	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1329	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R1331	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1332	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1334	1-218-875-11	METAL CHIP 15K 0.50% 1/16W	(TRV50E/TRV60E/TRV70E)
R1334	1-218-881-11	METAL CHIP 27K 0.50% 1/16W	(TRV30E/TRV40E)
R1336	1-218-901-11	METAL CHIP 180K 0.50% 1/16W	(TRV30E/TRV40E)
R1336	1-218-903-11	METAL CHIP 220K 0.50% 1/16W	(TRV50E/TRV60E/TRV70E)
R1341	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1344	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1346	1-216-838-11	METAL CHIP 27K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1347	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1348	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R1349	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1350	1-216-817-11	METAL CHIP 470 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1351	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R1355	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1358	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R1361	1-216-295-91	CONDUCTOR, CHIP (2012)	(TRV50E/TRV60E/TRV70E)

DD-79

Ref. No.	Part No.	Description	Remark
	A-7066-581-A	DD-79PV (MO) BOARD, COMPLETE	
		****************************	
			(TRV30E/TRV40E)
	A-7066-680-A	DD-79PV (ST) BOARD, COMPLETE	
		****************************	
			(TRV50E/TRV60E/TRV70E)
		< CAPACITOR >	
C901	1-164-492-11	CERAMIC CHIP 0.15uF 10% 16V	
C902	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C903	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C904	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C906	1-164-245-11	CERAMIC CHIP 0.015uF 10% 25V	
C907	1-162-963-11	CERAMIC CHIP 680PF 10% 50V	
C908	1-162-963-11	CERAMIC CHIP 680PF 10% 50V	
C909	1-162-963-11	CERAMIC CHIP 680PF 10% 50V	
C910	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C911	1-162-963-11	CERAMIC CHIP 680PF 10% 50V	
C912	1-128-530-11	ELECT CHIP 33uF 20% 10V	
C914	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C915	1-165-178-11	CERAMIC CHIP 6.8uF 16V	
C917	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C918	1-165-178-11	CERAMIC CHIP 6.8uF 16V	
C920	1-165-178-11	CERAMIC CHIP 6.8uF 16V	
C921	1-165-178-11	CERAMIC CHIP 6.8uF 16V	
C923	1-165-178-11	CERAMIC CHIP 6.8uF 16V	
C924	1-165-178-11	CERAMIC CHIP 6.8uF 16V	
C925	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C926	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C927	1-165-178-11	CERAMIC CHIP 6.8uF 16V	
C928	1-165-178-11	CERAMIC CHIP 6.8uF 16V	
C929	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C930	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C931	1-128-004-11	ELECT CHIP 10uF 20% 16V	
C932	1-128-004-11	ELECT CHIP 10uF 20% 16V	
C934	1-128-004-11	ELECT CHIP 10uF 20% 16V	
C936	1-128-004-11	ELECT CHIP 10uF 20% 16V	
C938	1-128-004-11	ELECT CHIP 10uF 20% 16V	
C939	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C940	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C941	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C942	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C943	1-163-019-11	CERAMIC CHIP 0.0068uF 10% 25V	
C944	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C950	1-128-004-11	ELECT CHIP 10uF 20% 16V	
		< CONNECTOR >	
CN901	1-695-324-11	CONNECTOR, BOARD TO BOARD 42P	
* CN902	1-764-712-11	CONNECTOR, FFC/FPC (LIF) 13P	

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D901	8-719-421-27	DIODE MA728	
D908	8-719-421-27	DIODE MA728	
D909	8-719-404-49	DIODE MA111	
D910	8-719-404-49	DIODE MA111	
		< IC >	
IC901	8-759-295-31	IC MB3799-03PFV-G-BND-ER	
		< JACK >	
J901	1-537-281-11	TERMINAL BOARD (BATTERY TERMINAL)	
J902	1-565-276-21	JACK, ULTRA SMALL 1P (LANC)	
J903	1-568-027-11	JACK, SMALL TYPE 1P (PHONES)	(TRV30E/TRV40E)
J903	1-569-950-21	JACK (PHONES)(TRV50E/TRV60E/TRV70E)	
		< COIL >	
L901	1-424-653-11	COIL, CHOKE 10uH	
L902	1-424-653-11	COIL, CHOKE 10uH	
L903	1-424-653-11	COIL, CHOKE 10uH	
L904	1-409-556-11	COIL, CHOKE 47uH	
L905	1-424-674-11	COIL, CHOKE 22uH	
L906	1-409-556-11	COIL, CHOKE 47uH	
L907	1-424-674-11	COIL, CHOKE 22uH	
L908	1-424-674-11	COIL, CHOKE 22uH	
L909	1-412-056-11	INDUCTOR CHIP 4.7uH	
L910	1-412-056-11	INDUCTOR CHIP 4.7uH	
L912	1-412-056-11	INDUCTOR CHIP 4.7uH	
L914	1-412-064-11	INDUCTOR CHIP 100uH	
L915	1-412-064-11	INDUCTOR CHIP 100uH	
L916	1-412-056-11	INDUCTOR CHIP 4.7uH	
L917	1-412-056-11	INDUCTOR CHIP 4.7uH	
		< IC LINK >	
⚠PS251	1-533-284-11	LINK, CHIP IC (SOC1600 1.6A)	
⚠PS252	1-533-284-11	LINK, CHIP IC (SOC1600 1.6A)	
⚠PS253	1-533-284-11	LINK, CHIP IC (SOC1600 1.6A)	
⚠PS254	1-533-284-11	LINK, CHIP IC (SOC1600 1.6A)	
		< TRANSISTOR >	
Q902	8-729-804-41	TRANSISTOR 2SB1122-S	
Q903	8-729-823-82	TRANSISTOR FP101	
Q904	8-729-823-84	TRANSISTOR FP102	
Q905	8-729-823-82	TRANSISTOR FP101	
Q906	8-729-823-82	TRANSISTOR FP101	
Q907	8-729-823-82	TRANSISTOR FP101	
Q909	8-729-804-41	TRANSISTOR 2SB1122-S	
Q914	8-729-402-42	TRANSISTOR UN5213	
Q915	8-729-402-42	TRANSISTOR UN5213	
Q916	8-729-402-42	TRANSISTOR UN5213	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

< RESISTOR >

Ref.No.	Part No.	Description	Remark
R901	1-218-872-11	METAL CHIP 11K 0.50% 1/16W	
R902	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R903	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R904	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R905	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R906	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R907	1-216-035-00	METAL CHIP 270 5% 1/10W	
R908	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R909	1-216-031-00	METAL CHIP 180 5% 1/10W	
R910	1-216-029-00	METAL CHIP 150 5% 1/10W	
R911	1-216-029-00	METAL CHIP 150 5% 1/10W	
R912	1-216-029-00	METAL CHIP 150 5% 1/10W	
R913	1-216-817-11	METAL CHIP 470 5% 1/16W	
R915	1-216-864-11	METAL CHIP 0 5% 1/16W	
R916	1-216-864-11	METAL CHIP 0 5% 1/16W	
R917	1-216-864-11	METAL CHIP 0 5% 1/16W	
R918	1-216-819-11	METAL CHIP 680 5% 1/16W	
R919	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R920	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R921	1-412-052-21	INDUCTOR CHIP 1UH	
R922	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R923	1-412-052-21	INDUCTOR CHIP 1UH	
R924	1-412-979-21	INDUCTOR 1UH	
R925	1-216-864-11	METAL CHIP 0 5% 1/16W	
R927	1-216-864-11	METAL CHIP 0 5% 1/16W	
R928	1-216-852-11	METAL CHIP 390K 5% 1/16W	
R931	1-216-813-11	METAL CHIP 220 5% 1/16W	
R932	1-412-979-21	INDUCTOR 1UH	(TRV50E/TRV60E/TRV70E)
R933	1-412-979-21	INDUCTOR 1UH	
R936	1-412-979-21	INDUCTOR 1UH	
R937	1-216-864-11	METAL CHIP 0 5% 1/16W	
R938	1-216-864-11	METAL CHIP 0 5% 1/16W	
R940	1-216-864-11	METAL CHIP 0 5% 1/16W	
R941	1-218-849-11	METAL CHIP 1.2K 0.50% 1/16W	
R942	1-216-864-11	METAL CHIP 0 5% 1/16W	
R944	1-216-864-11	METAL CHIP 0 5% 1/16W	
R945	1-218-847-11	METAL CHIP 1K 0.50% 1/16W	

< TRANSFORMER >

Ref.No.	Part No.	Description	Remark
T901	1-426-938-11	TRANSFORMER, DC/DC CONVERTER	

A-7066-683-A HE-20PV BOARD, COMPLETE (TRV60E/TRV70E)
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< CAPACITOR >

Ref.No.	Part No.	Description	Remark
C1103	1-162-917-11	CERAMIC CHIP 15PF 5% 50V	
C1106	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C1107	1-162-917-11	CERAMIC CHIP 15PF 5% 50V	
C1108	1-162-925-11	CERAMIC CHIP 68PF 5% 50V	
C1109	1-162-928-11	CERAMIC CHIP 120PF 5% 50V	
C1110	1-162-909-11	CERAMIC CHIP 4PF 0.25PF 50V	
C1111	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1112	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1113	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C1114	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1115	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1116	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1117	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1118	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1119	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C1121	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1122	1-164-218-11	CERAMIC CHIP 180PF 0.25PF 50V	
C1123	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C1124	1-162-925-11	CERAMIC CHIP 68PF 5% 50V	
C1125	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1126	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	
C1127	1-162-910-11	CERAMIC CHIP 5PF 0.25PF 50V	
C1128	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1129	1-162-925-11	CERAMIC CHIP 68PF 5% 50V	
C1130	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1131	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1132	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1133	1-162-921-11	CERAMIC CHIP 33PF 5% 50V	
C1134	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1135	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1136	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C1137	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1138	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1139	1-162-915-11	CERAMIC CHIP 10PF 0.5PF 50V	
C1140	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1141	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1142	1-162-957-11	CERAMIC CHIP 220PF 5% 50V	
C1143	1-162-912-11	CERAMIC CHIP 7PF 0.5PF 50V	
C1144	1-162-918-11	CERAMIC CHIP 18PF 5% 50V	
C1146	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C1147	1-162-912-11	CERAMIC CHIP 7PF 0.5PF 50V	
C1148	1-162-917-11	CERAMIC CHIP 15PF 5% 50V	
C1151	1-162-921-11	CERAMIC CHIP 33PF 5% 50V	
C1152	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1155	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C1156	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C1157	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C1160	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C1161	1-164-218-11	CERAMIC CHIP 180PF 0.25PF 50V	
C1162	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	
C1163	1-162-915-11	CERAMIC CHIP 10PF 0.5PF 50V	
C1164	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	

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Ref. No.	Part No.	Description			Remark
C1165	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C1166	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C1167	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1168	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C1169	1-164-155-11	CERAMIC CHIP	75PF	5%	50V
C1170	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C1171	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1173	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C1175	1-162-928-11	CERAMIC CHIP	120PF	5%	50V
C1176	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C1177	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C1178	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V
C1179	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C1180	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C1181	1-164-362-11	CERAMIC CHIP	470PF	5%	50V
C1182	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C1183	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1184	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1185	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C1186	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C1187	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C1188	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1189	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1192	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C1196	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C1198	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C1199	1-162-927-11	CERAMIC CHIP	100PF	5%	50V

< CONNECTOR >

* CN1101	1-573-341-11	CONNECTOR, BOARD TO BOARD 26P	

< DIODE >

D1101	8-719-404-49	DIODE	MA111
D1102	8-719-027-48	DIODE	MA142WA- (TX)
D1103	8-719-027-48	DIODE	MA142WA- (TX)
D1104	8-719-404-49	DIODE	MA111
D1105	8-719-404-49	DIODE	MA111

< FILTER >

FL1101	1-236-775-11	FILTER, LOW PASS (DEM)
FL1102	1-239-112-21	FILTER, LOW PASS (Y)

< IC >

IC1101	8-752-058-02	IC	CXA1509AR
IC1102	8-759-070-51	IC	SN74HCU04ADB

< COIL >

Ref. No.	Part No.	Description	Remark
L1101	1-412-963-11	INDUCTOR 100uH	
L1102	1-412-954-11	INDUCTOR 18uH	
L1103	1-412-949-21	INDUCTOR 6.8uH	
L1104	1-412-959-11	INDUCTOR 47uH	
L1105	1-412-954-11	INDUCTOR 18uH	
L1106	1-412-945-11	INDUCTOR 3.3uH	
L1107	1-412-962-11	INDUCTOR 82uH	
L1108	1-412-954-11	INDUCTOR 18uH	
L1109	1-412-948-11	INDUCTOR 5.6uH	
L1110	1-412-951-11	INDUCTOR 10uH	
L1111	1-410-656-11	INDUCTOR CHIP 150uH	
L1112	1-412-058-11	INDUCTOR CHIP 10uH	
L1113	1-412-058-11	INDUCTOR CHIP 10uH	
L1115	1-412-954-11	INDUCTOR 18uH	
L1116	1-412-946-11	INDUCTOR 3.9uH	
L1118	1-412-953-11	INDUCTOR 15uH	
L1119	1-412-949-21	INDUCTOR 6.8uH	
L1120	1-412-949-21	INDUCTOR 6.8uH	
L1121	1-412-951-11	INDUCTOR 10uH	
L1122	1-412-953-11	INDUCTOR 15uH	
L1123	1-412-944-11	INDUCTOR 2.7uH	
L1124	1-412-959-11	INDUCTOR 47uH	
L1125	1-412-962-11	INDUCTOR 82uH	
L1126	1-412-951-11	INDUCTOR 10uH	
L1128	1-412-962-11	INDUCTOR 82uH	

< TRANSISTOR >

Q1102	8-729-402-42	TRANSISTOR	UN5213
Q1103	8-729-012-50	TRANSISTOR	2SC4400-3/4/5
Q1107	8-729-402-42	TRANSISTOR	UN5213
Q1110	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q1111	8-729-420-24	TRANSISTOR	2SB1218A-QRS
Q1113	8-729-012-50	TRANSISTOR	2SC4400-3/4/5
Q1114	8-729-230-63	TRANSISTOR	2SD1819A-QRS
Q1115	8-729-012-50	TRANSISTOR	2SC4400-3/4/5
Q1117	8-729-230-63	TRANSISTOR	2SC4116-YG
Q1118	8-729-230-63	TRANSISTOR	2SC4116-YG
Q1119	8-729-402-42	TRANSISTOR	UN5213
Q1120	8-729-403-35	TRANSISTOR	UN5113
Q1121	8-729-420-24	TRANSISTOR	2SB1218A-QRS
Q1122	8-729-230-63	TRANSISTOR	2SC4116-YG
Q1123	8-729-012-50	TRANSISTOR	2SC4400-3/4/5
Q1125	8-729-420-24	TRANSISTOR	2SB1218A-QRS
Q1126	8-729-012-50	TRANSISTOR	2SC4400-3/4/5
Q1127	8-729-403-35	TRANSISTOR	UN5113
Q1128	8-729-230-63	TRANSISTOR	2SC4116-YG
Q1129	8-729-012-50	TRANSISTOR	2SC4400-3/4/5
Q1130	8-729-230-63	TRANSISTOR	2SC4116-YG
Q1131	8-729-824-02	TRANSISTOR	2SA1838
Q1132	8-729-012-50	TRANSISTOR	2SC4400-3/4/5
Q1133	8-729-012-50	TRANSISTOR	2SC4400-3/4/5
Q1134	8-729-402-42	TRANSISTOR	UN5213
Q1135	8-729-402-42	TRANSISTOR	UN5213

Ref.No.	Part No.	Description	Remark
Q1136	8-729-402-42	TRANSISTOR UN5213	
Q1137	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q1138	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q1139	8-729-402-42	TRANSISTOR UN5213	
Q1143	8-729-403-35	TRANSISTOR UN5113	
Q1144	8-729-236-63	TRANSISTOR 2SD1819A-QRS	
		< RESISTOR >	
R1100	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R1101	1-216-814-11	METAL CHIP 270 5% 1/16W	
R1102	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1103	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1104	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1105	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1106	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R1107	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1108	1-216-813-11	METAL CHIP 220 5% 1/16W	
R1109	1-216-813-11	METAL CHIP 220 5% 1/16W	
R1110	1-216-815-11	METAL CHIP 330 5% 1/16W	
R1111	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R1112	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R1113	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1114	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1115	1-216-820-11	METAL CHIP 820 5% 1/16W	
R1116	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1118	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1119	1-216-815-11	METAL CHIP 330 5% 1/16W	
R1120	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R1123	1-216-824-11	METAL CHIP 1.8K 5% 1/16W	
R1124	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R1125	1-216-834-11	METAL CHIP 12K 5% 1/16W	
R1127	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R1128	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R1129	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1130	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1131	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1132	1-216-820-11	METAL CHIP 820 5% 1/16W	
R1134	1-216-820-11	METAL CHIP 820 5% 1/16W	
R1135	1-216-814-11	METAL CHIP 270 5% 1/16W	
R1136	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1138	1-216-816-11	METAL CHIP 390 5% 1/16W	
R1148	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R1149	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R1151	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R1152	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1153	1-216-818-11	METAL CHIP 560 5% 1/16W	
R1154	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1155	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1156	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R1157	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R1158	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R1159	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R1160	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1161	1-216-819-11	METAL CHIP 680 5% 1/16W	
R1162	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R1163	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1164	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R1165	1-216-814-11	METAL CHIP 270 5% 1/16W	
R1166	1-216-815-11	METAL CHIP 330 5% 1/16W	
R1167	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1168	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R1169	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R1170	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R1171	1-216-842-11	METAL CHIP 56K 5% 1/16W	
R1172	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R1173	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R1174	1-216-813-11	METAL CHIP 220 5% 1/16W	
R1175	1-216-813-11	METAL CHIP 220 5% 1/16W	
R1176	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R1177	1-216-814-11	METAL CHIP 270 5% 1/16W	
R1178	1-216-822-11	METAL CHIP 1.2K 5% 1/16W	
R1179	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1181	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1182	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R1183	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1184	1-216-819-11	METAL CHIP 680 5% 1/16W	
R1185	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1186	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1187	1-216-815-11	METAL CHIP 330 5% 1/16W	
R1188	1-216-820-11	METAL CHIP 820 5% 1/16W	
R1189	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1191	1-216-813-11	METAL CHIP 220 5% 1/16W	
R1194	1-216-819-11	METAL CHIP 680 5% 1/16W	
R1195	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R1196	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1197	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1198	1-216-819-11	METAL CHIP 680 5% 1/16W	
R1199	1-216-819-11	METAL CHIP 680 5% 1/16W	
R1201	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1202	1-216-813-11	METAL CHIP 220 5% 1/16W	
R1203	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1204	1-216-815-11	METAL CHIP 330 5% 1/16W	
R1205	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1206	1-216-815-11	METAL CHIP 330 5% 1/16W	
R1207	1-216-815-11	METAL CHIP 330 5% 1/16W	
R1208	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R1209	1-216-817-11	METAL CHIP 470 5% 1/16W	
R1210	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R1212	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1213	1-216-833-11	METAL CHIP 10K 5% 1/16W	

Ref. No.	Part No.	Description				Remark
R1214	1-216-820-11	METAL CHIP	820	5%	1/16W	
R1215	1-216-819-11	METAL CHIP	680	5%	1/16W	
R1216	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R1217	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R1218	1-216-817-11	METAL CHIP	470	5%	1/16W	
R1219	1-216-817-11	METAL CHIP	470	5%	1/16W	
R1220	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1221	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1222	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1223	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1224	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R1225	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R1229	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R1231	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1232	1-216-811-11	METAL CHIP	150	5%	1/16W	

LS-33 BOARD (Ref. No. 7,000 Series)
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Ref. No.	Part No.	Description				Remark
		< DIODE >				
D001	8-719-989-52	DIODE	GL4600S			
		< HALL ELEMENT >				
H001	8-719-987-62	DIODE	LT140SAZ			
H002	8-719-987-62	DIODE	LT140SAZ			
		< TRANSISTOR >				
Q001	8-729-012-46	TRANSISTOR	PT4600FS			
Q002	8-729-012-46	TRANSISTOR	PT4600FS			
		< RESISTOR >				
R003	1-216-033-00	METAL CHIP	220	5%	1/10W	
R004	1-216-033-00	METAL CHIP	220	5%	1/10W	
R010	1-216-033-00	METAL CHIP	220	5%	1/10W	
R011	1-216-033-00	METAL CHIP	220	5%	1/10W	
		< SWITCH >				
S002	1-572-987-11	SWITCH, PUSH (3 KEY)				(TAPE SELECT, REC PROOF)

Ref. No.	Part No.	Description				Remark
	A-7056-685-A	MA-237PV (ST) BOARD, COMPLETE *****************************				(TRV50E/TRV60E/TRV70E)
	A-7072-365-A	MA-237PV (MO) BOARD, COMPLETE *****************************				(TRV30E/TRV40E)
		< CAPACITOR >				
C015	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	(TRV50E/TRV60E/TRV70E)
C016	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	(TRV30E/TRV40E)
C016	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V	(TRV50E/TRV60E/TRV70E)
C017	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	(TRV50E/TRV60E/TRV70E)
C018	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	(TRV30E/TRV40E)
C019	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	(TRV30E/TRV40E)
C020	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	(TRV50E/TRV60E/TRV70E)
C021	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	(TRV30E/TRV40E)
C022	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	(TRV50E/TRV60E/TRV70E)
C023	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	(TRV50E/TRV60E/TRV70E)
C024	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	(TRV50E/TRV60E/TRV70E)
C026	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	(TRV30E/TRV40E)
C027	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	(TRV50E/TRV60E/TRV70E)
C028	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	(TRV50E/TRV60E/TRV70E)
C029	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	(TRV50E/TRV60E/TRV70E)
C030	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	(TRV50E/TRV60E/TRV70E)
C031	1-164-346-11	CERAMIC CHIP	1uF		16V	(TRV30E/TRV40E)
C032	1-164-346-11	CERAMIC CHIP	1uF		16V	(TRV30E/TRV40E)
C033	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	(TRV30E/TRV40E)
C034	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	(TRV50E/TRV60E/TRV70E)
C035	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	(TRV50E/TRV60E/TRV70E)
C036	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	(TRV50E/TRV60E/TRV70E)
C037	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	(TRV50E/TRV60E/TRV70E)

Ref. No.	Part No.	Description	Remark
C038	1-162-967-11	CERAMIC CHIP 0.0033uF 10% 50V	(TRV50E/TRV60E/TRV70E)
C039	1-162-969-11	CERAMIC CHIP 0.0068uF 10% 25V	(TRV50E/TRV60E/TRV70E)
C040	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	(TRV50E/TRV60E/TRV70E)
C042	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	(TRV50E/TRV60E/TRV70E)
C043	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	(TRV50E/TRV60E/TRV70E)
C044	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	(TRV50E/TRV60E/TRV70E)
C045	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	(TRV50E/TRV60E/TRV70E)
C049	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	(TRV50E/TRV60E/TRV70E)
		< CONNECTOR >	
CN015	1-764-706-11	CONNECTOR, FFC/FPC (LIF) 7P	(TRV30E/TRV40E)
CN015	1-766-867-21	CONNECTOR, FFC/FPC 7P	(TRV50E/TRV60E/TRV70E)
CN016	1-691-489-11	CONNECTOR, FFC/FPC 10P	(TRV50E/TRV60E/TRV70E)
CN016	1-764-709-11	CONNECTOR, FFC/FPC (LIF) 10P	(TRV30E/TRV40E)
		< DIODE >	
D016	8-719-404-19	DIODE LN1251C (TALLY)	
		< IC >	
IC015	8-759-339-62	IC NJM2118M-TE2	(TRV30E/TRV40E)
IC016	8-759-161-31	IC LA7471M-TE-B	(TRV50E/TRV60E/TRV70E)
		< JACK >	
J015	1-568-027-11	JACK, SMALL TYPE 1P (EXT MIC)	(TRV30E/TRV40E)
J015	1-691-737-11	JACK (SMALL TYPE) (EXT MIC)	(TRV50E/TRV60E/TRV70E)
		< COIL >	
L015	1-216-295-91	CONDUCTOR, CHIP (2012)	
L016	1-216-295-91	CONDUCTOR, CHIP (2012)	
L017	1-412-939-11	INDUCTOR 1uH	(TRV50E/TRV60E/TRV70E)
		< TRANSISTOR >	
Q015	8-729-420-24	TRANSISTOR 2SB1218A-QRS	(TRV30E/TRV40E)
		< RESISTOR >	
R015	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R016	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R017	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R018	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV30E/TRV40E)
R019	1-216-839-11	METAL CHIP 33K 5% 1/16W	(TRV30E/TRV40E)
R020	1-216-839-11	METAL CHIP 33K 5% 1/16W	(TRV30E/TRV40E)
R021	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	(TRV30E/TRV40E)
R022	1-216-809-11	METAL CHIP 100 5% 1/16W	(TRV30E/TRV40E)
R023	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R024	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R025	1-216-835-11	METAL CHIP 15K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R026	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R027	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R028	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R029	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R030	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R031	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R033	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R034	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R035	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R036	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R037	1-216-839-11	METAL CHIP 33K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R038	1-216-839-11	METAL CHIP 33K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R039	1-216-849-11	METAL CHIP 220K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R042	1-216-838-11	METAL CHIP 27K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R043	1-216-838-11	METAL CHIP 27K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R044	1-216-809-11	METAL CHIP 100 5% 1/16W	(TRV30E/TRV40E)
R045	1-216-815-11	METAL CHIP 330 5% 1/16W	

Ref. No.	Part No.	Description	Remark
	A-7056-686-A	MI-25PV BOARD, COMPLETE ************************	(TRV50E/TRV60E/TRV70E)
	A-7072-366-A	MI-25PV (MO) BOARD, COMPLETE ****************************	(TRV30E/TRV40E)
		< CAPACITOR >	
C001	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	(TRV30E/TRV40E)
C001	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV50E/TRV60E/TRV70E)
C002	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	(TRV30E/TRV40E)
C003	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C004	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV50E/TRV60E/TRV70E)
C004	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	(TRV30E/TRV40E)
C005	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C006	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV50E/TRV60E/TRV70E)
C008	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	(TRV50E/TRV60E/TRV70E)
C009	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV50E/TRV60E/TRV70E)
C010	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
		< CONNECTOR >	
* CN001	1-580-055-21	PIN, CONNECTOR 2P	
* CN002	1-580-055-21	PIN, CONNECTOR 2P	(TRV50E/TRV60E/TRV70E)
CN003	1-764-706-11	CONNECTOR, FFC/FPC (LIF) 7P	(TRV30E/TRV40E)
CN003	1-766-867-21	CONNECTOR, FFC/FPC 7P	(TRV50E/TRV60E/TRV70E)
		< DIODE >	
D001	8-719-404-49	DIODE MA111	(TRV30E/TRV40E)
D003	8-719-404-49	DIODE MA111	(TRV30E/TRV40E)
		< IC >	
IC001	8-749-923-29	IC RS-20E-T	
		< TRANSISTOR >	
Q001	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV30E/TRV40E)
		< RESISTOR >	
R001	1-216-821-11	METAL CHIP 1K 5% 1/16W	(TRV30E/TRV40E)
R001	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R002	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV30E/TRV40E)
R003	1-216-819-11	METAL CHIP 680 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R003	1-216-821-11	METAL CHIP 1K 5% 1/16W	(TRV30E/TRV40E)
R004	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV30E/TRV40E)
R005	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	(TRV30E/TRV40E)
R006	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R008	1-216-819-11	METAL CHIP 680 5% 1/16W	(TRV50E/TRV60E/TRV70E)

Ref. No.	Part No.	Description	Remark
	A-7066-583-A	PJ-70PV BOARD, COMPLETE **	(TRV30E/TRV40E)
	A-7066-682-A	PJ-70PV BOARD, COMPLETE ************************	(TRV50E/TRV60E/TRV70E)
		< CAPACITOR >	
C1506	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C1507	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C1508	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1509	1-164-383-11	CERAMIC CHIP 110PF 5% 50V	
C1510	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C1511	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C1512	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C1514	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C1515	1-164-392-11	CERAMIC CHIP 390PF 5% 50V	
C1516	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C1518	1-162-924-11	CERAMIC CHIP 56PF 5% 50V	
C1521	1-164-218-11	CERAMIC CHIP 180PF 0.25PF 50V	
		< CONNECTOR >	
* CN1502	1-573-334-11	CONNECTOR, BOARD TO BOARD 12P	
		< IC >	
IC1501	8-759-334-09	IC CXA2003N	
		< COIL >	
L1504	1-414-078-11	INDUCTOR 10uH	
		< TRANSISTOR >	
Q1506	8-729-402-42	TRANSISTOR UN5213	

Ref. No.	Part No.	Description	Remark

< RESISTOR >

R1507	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1512	1-218-871-11	METAL CHIP 10K 0.50% 1/16W	
R1513	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R1514	1-216-822-11	METAL CHIP 1.2K 5% 1/16W	
R1519	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R1521	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R1525	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R1536	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1550	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	

A-7072-394-A SL-38V (FD) BOARD, COMPLETE
****

< CAPACITOR >

C501	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C502	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C503	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C504	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	
C505	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	
C506	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C507	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C508	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C509	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C510	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C543	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	

< CONNECTOR >

CN500	1-691-473-21	CONNECTOR, FFC/FPC 7P	
CN500	1-691-481-11	CONNECTOR, FFC/FPC 7P	
CN501	1-691-472-21	CONNECTOR, FFC/FPC 6P	
CN501	1-691-480-11	CONNECTOR, FFC/FPC 6P	
CN502	1-691-482-21	CONNECTOR, FFC/FPC 15P	

< IC >

IC404	8-759-327-62	IC TA8482FN-EL	

< TRANSISTOR >

Q501	8-729-421-26	TRANSISTOR UN5214	
Q560	8-729-805-25	TRANSISTOR 2SB1121	
Q561	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q562	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q563	8-729-230-63	TRANSISTOR 2SC4116-YG	

< RESISTOR >

R501	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R502	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R503	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R504	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R505	1-217-671-11	METAL CHIP 1 5% 1/10W	
R506	1-217-671-11	METAL CHIP 1 5% 1/10W	
R507	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R508	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R509	1-216-168-00	METAL GLAZE 56 5% 1/8W	
R562	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R563	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R565	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R567	1-216-295-91	CONDUCTOR, CHIP (2012)	
R569	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R571	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R572	1-216-841-11	METAL CHIP 47K 5% 1/16W	

< FLEXIBLE BOARD >

W500	1-651-889-11	FP-48 FLEXIBLE BOARD 36P	
W501	1-642-186-11	FP-437 FLEXIBLE BOARD 4P	

A-7066-582-A VC-163PV (L) BOARD, COMPLETE (TRV30E)
****

A-7066-673-A VC-163PV (H) BOARD, COMPLETE
****
(TRV40E/TRV50E)

A-7066-681-A VC-163PV (H) BOARD, COMPLETE (TRV70E)
****

A-7066-688-A VC-163PV (H) BOARD, COMPLETE (TRV60E)
****

< CAPACITOR >

C604	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C605	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C606	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C609	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C610	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C612	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C616	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C617	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C618	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
C619	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C620	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C621	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C622	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C623	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C624	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C628	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C629	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C630	1-162-920-11	CERAMIC CHIP 27PF 5% 50V	
C632	1-162-974-11	CERAMIC CHIP 0.01uF 50V	

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Ref. No.	Part No.	Description				Remark
C633	1-162-920-11	CERAMIC CHIP	27PF	5%	50V	(EXCEPT:TRV30E)
C633	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	(TRV30E)
C634	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C635	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	(EXCEPT:TRV30E)
C636	1-164-360-11	CERAMIC CHIP	0.1uF		16V	(EXCEPT:TRV30E)
C637	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C638	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C641	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	(EXCEPT:TRV30E)
C642	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	(EXCEPT:TRV30E)
C644	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C645	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C646	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C647	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C691	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	
C697	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	
C698	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	
C699	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	
C701	1-163-059-91	CERAMIC CHIP	0.01uF	10%	50V	
C702	1-162-638-11	CERAMIC CHIP	1uF		16V	
C703	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C704	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C705	1-164-298-11	CERAMIC CHIP	0.15uF	10%	25V	
C706	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C708	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C709	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C710	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C711	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C712	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C713	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V	
C715	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C716	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C717	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C718	1-163-059-91	CERAMIC CHIP	0.01uF	10%	50V	
C719	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C720	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C721	1-162-916-11	CERAMIC CHIP	12PF	5%	50V	
C722	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V	
C724	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	(EXCEPT:TRV30E)
C724	1-162-925-11	CERAMIC CHIP	68PF	5%	50V	(TRV30E/TRV40E)
C725	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C726	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C727	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C728	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C729	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C730	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	
C731	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V	
C732	1-162-638-11	CERAMIC CHIP	1uF		16V	
C733	1-162-638-11	CERAMIC CHIP	1uF		16V	
C734	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V	
C735	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C742	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C743	1-163-059-91	CERAMIC CHIP	0.01uF	10%	50V	
C744	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C745	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C746	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C747	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C750	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C751	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C752	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C753	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C754	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C755	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C756	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V	
C757	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C771	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V	(TRV40E/TRV50E/TRV70E)
C772	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	(TRV40E/TRV50E/TRV70E)
C773	1-164-299-11	CERAMIC CHIP	0.22uF	10%	25V	(TRV40E/TRV50E/TRV70E)
C774	1-128-257-21	ELECT CHIP	33uF	20%	10V	(TRV40E/TRV50E/TRV70E)
C775	1-128-257-21	ELECT CHIP	33uF	20%	10V	(TRV40E/TRV50E/TRV70E)
C776	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	(TRV40E/TRV50E/TRV70E)
C777	1-162-568-11	CERAMIC CHIP	0.33uF	10%	16V	(TRV40E/TRV50E/TRV70E)
C778	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	(TRV40E/TRV50E/TRV70E)
C779	1-162-568-11	CERAMIC CHIP	0.33uF	10%	16V	(TRV40E/TRV50E/TRV70E)
C780	1-164-360-11	CERAMIC CHIP	0.1uF		16V	(TRV40E/TRV50E/TRV70E)
C781	1-162-974-11	CERAMIC CHIP	0.01uF		50V	(TRV40E/TRV50E/TRV70E)
C782	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	(TRV40E/TRV50E/TRV70E)
C783	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	(TRV40E/TRV50E/TRV70E)
C784	1-162-974-11	CERAMIC CHIP	0.01uF		50V	(TRV40E/TRV50E/TRV70E)
C785	1-162-974-11	CERAMIC CHIP	0.01uF		50V	(EXCEPT:TRV30E)
C786	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	(EXCEPT:TRV30E)

Ref.No.	Part No.	Description	Remark
C788	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V (TRV40E/TRV50E/TRV70E)	
C789	1-164-245-11	CERAMIC CHIP 0.015uF 10% 25V (TRV40E/TRV50E/TRV70E)	
C790	1-164-299-11	CERAMIC CHIP 0.22uF 10% 25V (TRV40E/TRV50E/TRV70E)	
C793	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V (TRV40E/TRV50E/TRV70E)	
C794	1-164-360-11	CERAMIC CHIP 0.1uF 16V (TRV40E/TRV50E/TRV70E)	
		< CONNECTOR >	
* CN601	1-764-395-21	CONNECTOR, BOARD TO BOARD 42P	
CN701	1-750-630-11	CONNECTOR, FFC/FPC (ZIF) 16P	
CN751	1-764-528-11	CONNECTOR, FFC/FPC (ZIF) 21P	
CN775	1-691-487-21	CONNECTOR, FFC/FPC 8P (TRV40E/TRV50E/TRV70E)	
		< TRIMMER >	
CT701	1-141-356-11	CAP, ADJ	
		< DIODE >	
D601	8-719-404-46	DIODE MA110 (EXCEPT:TRV30E)	
D701	8-719-404-46	DIODE MA110	
D702	8-719-404-46	DIODE MA110	
D703	8-719-404-46	DIODE MA110	
D705	8-719-404-46	DIODE MA110	
		< FILTER >	
FL601	1-239-352-11	FILTER, LOW PASS (EXCEPT:TRV30E)	
FL601	1-239-766-11	FILTER, LOW PASS (TRV30E)	
		< IC >	
IC601	8-759-276-29	IC XL9020F-E2	
IC602	8-759-344-95	IC MC68HC11MA8FU-SC424618FU	
IC603	8-759-064-36	IC MB88346BPFV	
IC609	8-752-374-94	IC CXD2150BR	
IC610	8-752-376-21	IC CXD2151AR	
IC611	8-759-262-36	IC CXD2133BR	
IC613	8-759-297-76	IC CXD2152AREL (EXCEPT:TRV30E)	
IC614	8-759-328-91	IC uPD6461GS-811-GLG-E2	
IC701	8-752-372-14	IC CXD1267AN	
IC702	8-752-365-73	IC CXD2405R (EXCEPT:TRV30E)	
IC702	8-752-365-74	IC CXD1266R (TRV30E)	
IC703	8-752-073-11	IC CXA2006Q	
IC704	8-759-331-07	IC AD43021-REEL	
IC705	8-752-373-69	IC CXD2407BR	
IC751	8-759-701-24	IC NJM3414M	
IC752	8-759-058-50	IC BA10324AF-E2	
IC753	8-752-365-65	IC CXD2126N	
IC754	8-759-247-07	IC MPC17A34VMEL	

Ref.No.	Part No.	Description	Remark
IC755	8-759-209-15	IC TC4SU69F	
IC772	8-759-234-77	IC TC4S66F (TRV40E/TRV50E/TRV70E)	
IC773	8-759-234-77	IC TC4S66F (TRV40E/TRV50E/TRV70E)	
IC774	8-759-058-45	IC NJM3403AV (TE2) (TRV40E/TRV50E/TRV70E)	
IC775	8-759-080-34	IC TA75W01FU-TE12R (TRV40E/TRV50E/TRV70E)	
IC776	8-759-248-78	IC MB88102PFV-G-BND-ER (TRV40E/TRV50E/TRV70E)	
IC778	8-752-865-22	IC CXP81120-003R (EXCEPT:TRV30E)	
		< COIL >	
L601	1-412-058-11	INDUCTOR CHIP 10uH	
L602	1-414-078-11	INDUCTOR 10uH	
L603	1-412-058-11	INDUCTOR CHIP 10uH	
L604	1-414-078-11	INDUCTOR 10uH	
L605	1-410-389-31	INDUCTOR CHIP 47uH	
L606	1-216-295-91	CONDUCTOR, CHIP (2012)	
L607	1-414-078-11	INDUCTOR 10uH (EXCEPT:TRV30E)	
L608	1-412-006-31	INDUCTOR CHIP 10uH	
L609	1-412-979-21	INDUCTOR 1uH	
L610	1-216-864-11	METAL CHIP 0 5% 1/16W	
L611	1-216-295-91	CONDUCTOR, CHIP (2012)	
L612	1-414-230-11	INDUCTOR, FERRITE BEAD	
L614	1-216-295-91	CONDUCTOR, CHIP (2012)	
L702	1-216-296-91	CONDUCTOR, CHIP (3216)	
L703	1-412-058-11	INDUCTOR CHIP 10uH	
L704	1-412-058-11	INDUCTOR CHIP 10uH	
L705	1-412-058-11	INDUCTOR CHIP 10uH	
L706	1-216-296-91	CONDUCTOR, CHIP (3216)	
L751	1-412-062-11	INDUCTOR CHIP 47uH	
L752	1-216-296-91	CONDUCTOR, CHIP (3216)	
L753	1-216-296-91	CONDUCTOR, CHIP (3216)	
L775	1-412-058-11	INDUCTOR CHIP 10uH(TRV40E/TRV50E/TRV70E)	
L777	1-414-078-11	INDUCTOR 10uH (TRV40E/TRV50E/TRV70E)	
L778	1-414-078-11	INDUCTOR 10uH	
		< TRANSISTOR >	
Q604	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q605	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q606	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q607	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q701	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q711	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q751	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q752	8-729-015-76	TRANSISTOR UN5211-TX	
		< RESISTOR >	
R601	1-216-851-11	METAL CHIP 330K 5% 1/16W	
R602	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R603	1-216-857-11	METAL CHIP 1M 5% 1/16W	

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Ref. No.	Part No.	Description				Remark
R604	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R608	1-216-864-11	METAL CHIP	0	5%	1/16W	
R612	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R613	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R614	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R615	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R617	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R619	1-216-803-11	METAL CHIP	33	5%	1/16W	
R620	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R621	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R622	1-216-864-11	METAL CHIP	0	5%	1/16W	
R623	1-216-863-11	METAL GLAZE	3.3M	5%	1/16W	
R624	1-216-864-11	METAL CHIP	0	5%	1/16W	
R625	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R626	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R627	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R628	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R629	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R630	1-216-864-11	METAL CHIP	0	5%	1/16W	
R631	1-216-864-11	METAL CHIP	0	5%	1/16W	
R634	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R635	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R636	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R637	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R638	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R639	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R640	1-216-815-11	METAL CHIP	330	5%	1/16W	
R641	1-216-864-11	METAL CHIP	0	5%	1/16W	
R643	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R644	1-216-841-11	METAL CHIP	47K	5%	1/16W	(TRV30E)
R645	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R646	1-216-818-11	METAL CHIP	560	5%	1/16W	
R647	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R648	1-216-818-11	METAL CHIP	560	5%	1/16W	
R649	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R650	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R651	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R652	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R653	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT:TRV30E)
R654	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV30E)
R656	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV30E)
R657	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT:TRV30E)
R658	1-216-864-11	METAL CHIP	0	5%	1/16W	
R659	1-216-817-11	METAL CHIP	470	5%	1/16W	
R661	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R662	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R663	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R664	1-216-821-11	METAL CHIP	1K	5%	1/16W	

Ref. No.	Part No.	Description				Remark
R665	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R666	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R667	1-216-820-11	METAL CHIP	820	5%	1/16W	
R668	1-216-824-11	METAL CHIP	1.8K	5%	1/16W	
R701	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R702	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R703	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R705	1-216-824-11	METAL CHIP	1.8K	5%	1/16W	
R708	1-216-864-11	METAL CHIP	0	5%	1/16W	
R709	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R710	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV30E)
R711	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT:TRV30E)
R712	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV30E)
R713	1-216-803-11	METAL CHIP	33	5%	1/16W	
R714	1-216-864-11	METAL CHIP	0	5%	1/16W	
R715	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT:TRV30E)
R716	1-218-847-11	METAL CHIP	1K	0.50%	1/16W	
R717	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT:TRV30E)
R718	1-216-803-11	METAL CHIP	33	5%	1/16W	
R719	1-218-876-11	METAL CHIP	16K	0.50%	1/16W	
R721	1-216-864-11	METAL CHIP	0	5%	1/16W	
R722	1-216-864-11	METAL CHIP	0	5%	1/16W	
R723	1-216-864-11	METAL CHIP	0	5%	1/16W	
R725	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R726	1-216-864-11	METAL CHIP	0	5%	1/16W	
R727	1-216-864-11	METAL CHIP	0	5%	1/16W	
R728	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	(TRV30E)
R728	1-216-864-11	METAL CHIP	0	5%	1/16W	(EXCEPT:TRV30E)
R740	1-216-864-11	METAL CHIP	0	5%	1/16W	
R741	1-218-855-11	METAL CHIP	2.2K	0.50%	1/16W	
R742	1-218-865-11	METAL CHIP	5.6K	0.50%	1/16W	
R743	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R744	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R745	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R746	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R747	1-216-820-11	METAL CHIP	820	5%	1/16W	
R748	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R749	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R750	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R751	1-216-809-11	METAL CHIP	100	5%	1/16W	
R752	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R753	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R754	1-216-848-11	METAL CHIP	180K	5%	1/16W	
R755	1-216-855-11	METAL CHIP	680K	5%	1/16W	
R756	1-216-848-11	METAL CHIP	180K	5%	1/16W	
R757	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R758	1-216-837-11	METAL CHIP	22K	5%	1/16W	

Ref. No.	Part No.	Description	Remark
R759	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R760	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R761	1-216-842-11	METAL CHIP 56K 5% 1/16W	
R762	1-216-842-11	METAL CHIP 56K 5% 1/16W	
R764	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	(EXCEPT:TRV30E)
R764	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV30E)
R765	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV40E/TRV50E/TRV70E)
R766	1-216-835-11	METAL CHIP 15K 5% 1/16W	(TRV40E/TRV50E/TRV70E)
R767	1-216-850-11	METAL CHIP 270K 5% 1/16W	(TRV40E/TRV50E/TRV70E)
R768	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV40E/TRV50E/TRV70E)
R769	1-216-850-11	METAL CHIP 270K 5% 1/16W	(TRV40E/TRV50E/TRV70E)
R770	1-216-835-11	METAL CHIP 15K 5% 1/16W	(TRV40E/TRV50E/TRV70E)
R771	1-216-803-11	METAL CHIP 33 5% 1/16W	(TRV40E/TRV50E/TRV70E)
R772	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV40E/TRV50E/TRV70E)
R773	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV40E/TRV50E/TRV70E)
R774	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV40E/TRV50E/TRV70E)
R775	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV40E/TRV50E/TRV70E)
R776	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV40E/TRV50E/TRV70E)
R777	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV40E/TRV50E/TRV70E)
R778	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV40E/TRV50E/TRV70E)
R779	1-218-911-11	METAL CHIP 470K 0.50% 1/16W	(TRV40E/TRV50E/TRV70E)
R780	1-218-911-11	METAL CHIP 470K 0.50% 1/16W	(TRV40E/TRV50E/TRV70E)
R781	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV40E/TRV50E/TRV70E)
R782	1-218-911-11	METAL CHIP 470K 0.50% 1/16W	(TRV40E/TRV50E/TRV70E)
R783	1-218-911-11	METAL CHIP 470K 0.50% 1/16W	(TRV40E/TRV50E/TRV70E)
R784	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV30E)
R786	1-216-841-11	METAL CHIP 47K 5% 1/16W	(EXCEPT:TRV30E)
R787	1-216-841-11	METAL CHIP 47K 5% 1/16W	(EXCEPT:TRV30E)
R788	1-216-841-11	METAL CHIP 47K 5% 1/16W	(EXCEPT:TRV30E)
R789	1-216-841-11	METAL CHIP 47K 5% 1/16W	(EXCEPT:TRV30E)

Ref. No.	Part No.	Description	Remark
R790	1-216-833-11	METAL CHIP 10K 5% 1/16W	(EXCEPT:TRV30E)
R792	1-216-857-11	METAL CHIP 1M 5% 1/16W	(EXCEPT:TRV30E)
R793	1-216-841-11	METAL CHIP 47K 5% 1/16W	(EXCEPT:TRV30E)
		< VIBRATOR >	
X601	1-760-081-21	VIBRATOR, CERAMIC (24MHz)	
X701	1-760-321-11	VIBRATOR, CRYSTAL (28.375MHz)	
X775	1-579-553-11	VIBRATOR (12MHz)	(EXCEPT:TRV30E)
	A-7066-580-A	VS-126PV (L) BOARD, COMPLETE ****************************	(TRV30E:AUS, E, HK)
	A-7066-672-A	VS-126PV (M) BOARD, COMPLETE ****************************	(TRV40E:AUS, E, HK)
	A-7066-676-A	VS-126PV (M) BOARD, COMPLETE ****************************	(TRV40E:AEP, UK)
	A-7066-679-A	VS-126PV (H) BOARD, COMPLETE ****************************	(TRV70E:AEP, UK)
	A-7066-684-A	VS-126PV (H) BOARD, COMPLETE ****************************	(TRV70E:E, AUS, HK)
	A-7066-687-A	VS-126PV (M) BOARD, COMPLETE ****************************	(TRV60E:AEP, UK)
	A-7066-691-A	VS-126PV (M) BOARD, COMPLETE (TRV50E) *************************************	
	A-7085-058-A	VS-126PV (L) BOARD, COMPLETE ****************************	(TRV30E:AEP, UK)
		< CAPACITOR >	
C101	1-162-921-11	CERAMIC CHIP 33PF 5% 50V	(TRV30E/TRV40E/TRV50E)
C102	1-162-911-11	CERAMIC CHIP 6PF 0.5PF 50V	(TRV60E/TRV70E)
C102	1-162-922-11	CERAMIC CHIP 39PF 5% 50V	(TRV30E/TRV40E/TRV50E)
C103	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C104	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C106	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C107	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	

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Ref. No.	Part No.	Description				Remark
C108	1-162-926-11	CERAMIC CHIP	82PF	5%	50V	
C109	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	
C110	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	
C111	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C112	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
C113	1-164-217-11	CERAMIC CHIP	150PF	5%	50V	
C114	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C115	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C116	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C117	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V	
C118	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V	
C119	1-162-961-11	CERAMIC CHIP	330PF	10%	50V	
C121	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C122	1-162-961-11	CERAMIC CHIP	330PF	10%	50V	
C124	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C128	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C131	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C134	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C135	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C136	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C137	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	
C143	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	
C145	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V	
C146	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C147	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C148	1-162-958-11	CERAMIC CHIP	270PF	5%	50V	
C149	1-162-974-11	CERAMIC CHIP	0.01uF		50V	(TRV30E/TRV40E/TRV50E)
C150	1-162-974-11	CERAMIC CHIP	0.01uF		50V	(TRV30E/TRV40E/TRV50E)
C151	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	(TRV30E/TRV40E/TRV50E)
C152	1-162-974-11	CERAMIC CHIP	0.01uF		50V	(TRV30E/TRV40E/TRV50E)
C153	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C154	1-162-917-11	CERAMIC CHIP	15PF	5%	50V	(TRV30E/TRV40E/TRV50E)
C155	1-162-974-11	CERAMIC CHIP	0.01uF		50V	(TRV60E/TRV70E)
C156	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V	(TRV30E/TRV40E/TRV50E)
C158	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	(TRV30E/TRV40E/TRV50E)
C159	1-162-922-11	CERAMIC CHIP	39PF	5%	50V	(TRV30E/TRV40E/TRV50E)
C160	1-162-920-11	CERAMIC CHIP	27PF	5%	50V	(TRV30E/TRV40E/TRV50E)
C161	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	
C162	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(TRV30E/TRV40E/TRV50E)
C163	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(TRV30E/TRV40E/TRV50E)
C164	1-162-916-11	CERAMIC CHIP	12PF	5%	50V	(TRV30E/TRV40E/TRV50E)
C165	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V	(TRV30E/TRV40E/TRV50E)
C166	1-162-958-11	CERAMIC CHIP	270PF	5%	50V	
C167	1-164-382-11	CERAMIC CHIP	91PF	5%	50V	(TRV30E/TRV40E/TRV50E)
C168	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	(TRV30E/TRV40E/TRV50E)
C169	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	(TRV30E/TRV40E/TRV50E)
C170	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	(TRV60E/TRV70E)
C171	1-162-920-11	CERAMIC CHIP	27PF	5%	50V	(TRV60E/TRV70E)
C172	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	(TRV30E/TRV40E/TRV50E)
C173	1-164-155-11	CERAMIC CHIP	75PF	5%	50V	(TRV60E/TRV70E)
C175	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V	(TRV60E/TRV70E)
C176	1-162-922-11	CERAMIC CHIP	39PF	5%	50V	(TRV60E/TRV70E)
C177	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C178	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C179	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C190	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C202	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	(TRV60E/TRV70E)
C203	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C206	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C207	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	
C208	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C209	1-126-246-11	ELECT CHIP	220uF	20%	4V	
C210	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V	
C211	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C212	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C213	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V	
C214	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C215	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C216	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C217	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C218	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C220	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C221	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C222	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C227	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C228	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C229	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C230	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V	
C231	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C234	1-162-957-11	CERAMIC CHIP	220PF	5%	50V	

Ref. No.	Part No.	Description				Remark
C235	1-126-207-11	ELECT CHIP	33uF	20%	4V	
C238	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C239	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C240	1-164-392-11	CERAMIC CHIP	390PF	5%	50V	
C241	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C242	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C243	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C244	1-162-959-11	CERAMIC CHIP	330PF	5%	50V	
C245	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C247	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C248	1-164-217-11	CERAMIC CHIP	150PF	5%	50V	(TRV60E/TRV70E)
C250	1-164-217-11	CERAMIC CHIP	150PF	5%	50V	(TRV60E/TRV70E)
C251	1-162-926-11	CERAMIC CHIP	82PF	5%	50V	(TRV60E/TRV70E)
C251	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V	(TRV30E/TRV40E/TRV50E)
C258	1-164-346-11	CERAMIC CHIP	1uF		16V	
C262	1-164-360-11	CERAMIC CHIP	0.1uF		16V	(TRV30E/TRV40E/TRV50E)
C263	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C264	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C266	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C267	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C268	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C271	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C272	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V	
C274	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C275	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	(TRV30E/TRV40E/TRV50E)
C276	1-162-916-11	CERAMIC CHIP	12PF	5%	50V	(TRV30E/TRV40E/TRV50E)
C279	1-162-958-11	CERAMIC CHIP	270PF	5%	50V	(TRV30E/TRV40E/TRV50E)
C281	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V	(TRV30E/TRV40E/TRV50E)
C282	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	(TRV30E/TRV40E/TRV50E)
C284	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	
C285	1-135-318-11	TANTAL. CHIP	33uF	20%	4V	(TRV30E/TRV40E/TRV50E)
C286	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V	
C288	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	(TRV30E/TRV40E/TRV50E)
C289	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V	
C291	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	(TRV30E/TRV40E/TRV50E)
C292	1-164-346-11	CERAMIC CHIP	1uF		16V	(TRV60E/TRV70E)
C293	1-162-918-11	CERAMIC CHIP	18PF	5%	50V	
C294	1-162-974-11	CERAMIC CHIP	0.01uF		50V	(TRV60E/TRV70E)
C295	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	(TRV60E/TRV70E)
C296	1-162-974-11	CERAMIC CHIP	0.01uF		50V	(TRV60E/TRV70E)
C297	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	(TRV60E/TRV70E)
C298	1-164-360-11	CERAMIC CHIP	0.1uF		16V	(TRV60E/TRV70E)
C300	1-162-974-11	CERAMIC CHIP	0.01uF		50V	(TRV60E/TRV70E)
C301	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	(TRV30E/TRV40E/TRV50E)
C302	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V	(TRV60E/TRV70E)
C303	1-162-974-11	CERAMIC CHIP	0.01uF		50V	(TRV60E/TRV70E)
C304	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C305	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	(TRV30E/TRV40E/TRV50E)
C306	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	
C307	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C308	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	
C310	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V	
C311	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C312	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C314	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C315	1-162-923-11	CERAMIC CHIP	47PF	5%	50V	
C316	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C328	1-164-361-11	CERAMIC CHIP	0.047uF		16V	
C331	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C336	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V	
C398	1-162-925-11	CERAMIC CHIP	68PF	5%	50V	(TRV70E)
C500	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	
C501	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C502	1-164-361-11	CERAMIC CHIP	0.047uF		16V	
C503	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C504	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C506	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C507	1-162-918-11	CERAMIC CHIP	18PF	5%	50V	
C508	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	
C509	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C510	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C511	1-164-361-11	CERAMIC CHIP	0.047uF		16V	
C512	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C513	1-164-361-11	CERAMIC CHIP	0.047uF		16V	
C514	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C516	1-164-361-11	CERAMIC CHIP	0.047uF		16V	
C518	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C520	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C521	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C522	1-164-361-11	CERAMIC CHIP	0.047uF		16V	

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Ref. No.	Part No.	Description				Remark
C523	1-164-361-11	CERAMIC CHIP	0.047uF		16V	
C524	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C525	1-164-217-11	CERAMIC CHIP	150PF	5%	50V	(TRV30E/TRV40E/TRV50E)
C526	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C527	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C528	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C529	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C530	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V	
C531	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C532	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	
C533	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	(EXCEPT:TRV30E)
C534	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C535	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V	
C536	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V	
C537	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C539	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C540	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V	
C541	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C543	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V	
C544	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C545	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C546	1-164-346-11	CERAMIC CHIP	1uF		16V	
C547	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C548	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C549	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C550	1-128-530-11	ELECT CHIP	33uF	20%	10V	
C553	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	
C554	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	
C555	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	
C556	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C557	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C558	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C559	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C560	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C561	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C562	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C563	1-162-957-11	CERAMIC CHIP	220PF	5%	50V	
C564	1-162-957-11	CERAMIC CHIP	220PF	5%	50V	
C565	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C566	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C567	1-164-173-11	CERAMIC CHIP	0.0039uF	10%	50V	
C568	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C569	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C570	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C571	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C573	1-162-909-11	CERAMIC CHIP	4PF	0.25PF	50V	
C951	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C955	1-164-360-11	CERAMIC CHIP	0.1uF		16V	

Ref. No.	Part No.	Description				Remark
C959	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C961	1-164-346-11	CERAMIC CHIP	1uF		16V	
C962	1-162-917-11	CERAMIC CHIP	15PF	5%	50V	
C1251	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C1252	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C1254	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(TRV60E/TRV70E)
C1255	1-164-005-11	CERAMIC CHIP	0.47uF		25V	(TRV60E/TRV70E)
C1256	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C1257	1-126-246-11	ELECT CHIP	220uF	20%	4V	(TRV60E/TRV70E)
C1258	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V	(TRV60E/TRV70E)
C1260	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	(TRV60E/TRV70E)
C1261	1-164-156-11	CERAMIC CHIP	0.1uF		25V	(TRV60E/TRV70E)
C1262	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	(TRV60E/TRV70E)
C1263	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C1264	1-164-156-11	CERAMIC CHIP	0.1uF		25V	
C1268	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C1274	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C1275	1-162-917-11	CERAMIC CHIP	15PF	5%	50V	(TRV30E/TRV40E/TRV60E)
C1275	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	(TRV50E/TRV60E/TRV70E)
C1280	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C1281	1-162-974-11	CERAMIC CHIP	0.01uF		50V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN101	1-691-492-21	CONNECTOR, FFC/FPC 13P	
CN102	1-580-789-21	PIN, CONNECTOR (SMD) 6P	
CN201	1-766-343-21	CONNECTOR, FFC/FPC 13P	
* CN202	1-691-929-11	CONNECTOR, BOARD TO BOARD 34P	
* CN203	1-764-396-21	CONNECTOR, BOARD TO BOARD 42P	
* CN204	1-573-306-11	CONNECTOR, BOARD TO BOARD 12P	
* CN205	1-573-313-11	CONNECTOR, BOARD TO BOARD 26P	(TRV60E/TRV70E)
CN206	1-766-344-21	CONNECTOR, FFC/FPC 14P	
CN502	1-764-708-21	CONNECTOR, FFC/FPC (LIF) 9P	
CN503	1-766-353-21	CONNECTOR, FFC/FPC 23P	
CN504	1-695-325-11	CONNECTOR, BOARD TO BOARD 42P	
* CN505	1-764-397-21	CONNECTOR, BOARD TO BOARD 42P	

< DIODE >

Ref. No.	Part No.	Description		Remark
D101	8-719-800-76	DIODE	1SS226	(TRV30E/TRV40E/TRV50E)
D102	8-719-404-49	DIODE	MA111	
D201	8-719-027-50	DIODE	MA142WK	
D204	8-719-027-50	DIODE	MA142WK	
D208	8-719-027-50	DIODE	MA142WK	

Ref. No.	Part No.	Description	Remark
D214	8-719-404-49	DIODE MA111	
D216	8-719-027-50	DIODE MA142WK	
D218	8-719-800-76	DIODE 1SS226	
D219	8-719-404-49	DIODE MA111	
D321	8-719-052-33	DIODE MAZV082DFL	
D323	8-719-420-87	DIODE MA8130	(TRV60E/TRV70E)
D324	8-719-420-87	DIODE MA8130	(TRV60E/TRV70E)
D500	8-719-421-27	DIODE MA728	
⚠D501	8-719-421-27	DIODE MA728	
D504	8-719-404-49	DIODE MA111	
D505	8-719-404-49	DIODE MA111	
D506	8-719-404-49	DIODE MA111	
D1251	8-719-027-50	DIODE MA142WK	
D1252	8-719-027-50	DIODE MA142WK	(TRV60E/TRV70E)
D1253	8-719-052-33	DIODE MAZV082DFL	(TRV60E/TRV70E)
D1254	8-719-052-33	DIODE MAZV082DFL	(TRV60E/TRV70E)
D1255	8-719-420-87	DIODE MA8130	(TRV60E/TRV70E)

< FILTER >

Ref. No.	Part No.	Description	Remark
FL202	1-239-010-11	FILTER, LOW PASS (CCD. PAL. Y)	(TRV60E/TRV70E)
FL202	1-239-055-21	FILTER, LOW PASS (CCD. PAL. Y)	(TRV30E/TRV40E/TRV50E)

< IC >

Ref. No.	Part No.	Description	Remark
IC102	8-752-069-78	IC CXA1704R	
IC201	8-752-072-54	IC CXA1700AR-T6	(TRV30E/TRV50E)
IC201	8-752-072-55	IC CXA1810AR-T6	(TRV40E/TRV60E/TRV70E)
IC203	8-752-351-95	IC CXL1506N	
IC204	8-752-351-95	IC CXL1506N	(TRV60E/TRV70E)
IC205	8-752-053-21	IC CXA1211M	
IC209	8-759-327-93	IC TK16031AMTL	
IC251	8-752-069-60	IC CXA1812Q	
IC501	8-759-278-57	IC AK6420HF-E2	
IC502	8-759-295-62	IC S-8423DFS	
IC503	8-759-328-92	IC MB89098PFV-G-127-BND	
IC505	8-752-862-21	IC CXP87132-043R	
IC506	8-759-327-67	IC LB1950V-TLM	
IC508	8-759-195-09	IC XR1083CQ-E2	(TRV30E/TRV40E/TRV50E)
IC508	8-759-267-62	IC MB4470APFQ-G-BND-ER	(TRV60E/TRV70E)
IC509	8-759-059-05	IC TL1596CPW-ELM1000	
IC951	8-759-169-02	IC MB88344BPFV-G-BND-ER	

< COIL >

Ref. No.	Part No.	Description	Remark
L102	1-216-296-91	CONDUCTOR, CHIP (3216)	
L103	1-412-064-11	INDUCTOR CHIP 100uH	
L104	1-412-951-11	INDUCTOR 10uH	
L105	1-412-064-11	INDUCTOR CHIP 100uH	
L108	1-412-058-11	INDUCTOR CHIP 10uH	
L109	1-412-957-11	INDUCTOR 33uH	
L110	1-410-657-21	INDUCTOR CHIP 180uH	(TRV30E/TRV40E/TRV50E)
L111	1-412-950-11	INDUCTOR 8. 2uH	(TRV30E/TRV40E/TRV50E)
L112	1-412-280-31	INDUCTOR 330uH	
L113	1-412-957-11	INDUCTOR 33uH	(TRV30E/TRV40E/TRV50E)
L114	1-412-282-41	INDUCTOR 470uH	
L115	1-412-280-31	INDUCTOR 330uH	(TRV30E/TRV40E/TRV50E)
L116	1-410-657-21	INDUCTOR CHIP 180uH	
L118	1-410-655-31	INDUCTOR CHIP 120uH	(TRV30E/TRV40E/TRV50E)
L119	1-412-958-21	INDUCTOR 39uH	(TRV60E/TRV70E)
L120	1-412-951-11	INDUCTOR 10uH	(TRV30E/TRV40E/TRV50E)
L121	1-412-952-11	INDUCTOR 12uH	(TRV60E/TRV70E)
L122	1-412-058-11	INDUCTOR CHIP 10uH	
L123	1-412-949-21	INDUCTOR 6. 8uH	(TRV60E/TRV70E)
L201	1-412-963-11	INDUCTOR 100uH	(TRV60E/TRV70E)
L202	1-414-078-11	INDUCTOR 10uH	
L204	1-412-963-11	INDUCTOR 100uH	(TRV30E/TRV40E/TRV50E)
L207	1-216-295-91	CONDUCTOR, CHIP (2012)	(TRV30E/TRV40E/TRV50E)
L209	1-412-960-21	INDUCTOR 56uH	(TRV30E/TRV40E/TRV50E)
L210	1-412-953-11	INDUCTOR 15uH	
L211	1-412-954-11	INDUCTOR 18uH	
L213	1-412-953-11	INDUCTOR 15uH	(TRV30E/TRV40E/TRV50E)
L214	1-412-960-21	INDUCTOR 56uH	(TRV30E/TRV40E/TRV50E)
L399	1-412-950-11	INDUCTOR 8. 2uH	(TRV70E)
L500	1-216-295-91	CONDUCTOR, CHIP (2012)	
L501	1-216-295-91	CONDUCTOR, CHIP (2012)	
L503	1-412-960-21	INDUCTOR 56uH	
L504	1-414-078-11	INDUCTOR 10uH	
L506	1-216-295-91	CONDUCTOR, CHIP (2012)	
L951	1-216-295-91	CONDUCTOR, CHIP (2012)	
L952	1-216-295-91	CONDUCTOR, CHIP (2012)	
L954	1-412-963-11	INDUCTOR 100uH	
L1251	1-414-078-11	INDUCTOR 10uH	(TRV60E/TRV70E)
L1252	1-414-078-11	INDUCTOR 10uH	
L1253	1-412-960-21	INDUCTOR 56uH	(TRV40E/TRV50E/TRV70E)
L1253	1-412-963-11	INDUCTOR 100uH	(TRV30E/TRV60E)

< IC LINK >

Ref. No.	Part No.	Description	Remark
⚠PS500	1-576-122-21	LINK, IC (CCP2E10 0. 4A)	
⚠PS501	1-576-122-21	LINK, IC (CCP2E10 0. 4A)	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q101	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q102	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q103	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q104	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q105	8-729-402-42	TRANSISTOR UN5213	
Q106	8-729-402-42	TRANSISTOR UN5213	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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Ref. No.	Part No.	Description	Remark
Q109	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q111	8-729-403-35	TRANSISTOR UN5113	(TRV30E/TRV40E/TRV50E)
Q112	8-729-012-50	TRANSISTOR 2SC4400-3/4/5	(TRV30E/TRV40E/TRV50E)
Q113	8-729-420-24	TRANSISTOR 2SB1218A-QRS	(TRV30E/TRV40E/TRV50E)
Q114	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q115	8-729-012-50	TRANSISTOR 2SC4400-3/4/5	(TRV30E/TRV40E/TRV50E)
Q116	8-729-012-50	TRANSISTOR 2SC4400-3/4/5	(TRV60E/TRV70E)
Q117	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV30E/TRV40E/TRV50E)
Q118	8-729-420-24	TRANSISTOR 2SB1218A-QRS	(TRV60E/TRV70E)
Q119	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV30E/TRV40E/TRV50E)
Q121	8-729-012-50	TRANSISTOR 2SC4400-3/4/5	(TRV60E/TRV70E)
Q124	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV60E/TRV70E)
Q125	8-729-402-42	TRANSISTOR UN5213	(TRV60E/TRV70E)
Q126	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q127	8-729-402-42	TRANSISTOR UN5213	
Q129	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q131	8-729-015-74	TRANSISTOR UN5111	
Q132	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q133	8-729-012-50	TRANSISTOR 2SC4400-3/4/5	
Q134	8-729-402-48	TRANSISTOR UN521E	
Q135	8-729-402-48	TRANSISTOR UN521E	
Q136	8-729-420-53	TRANSISTOR UN5115	(TRV60E/TRV70E)
Q202	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q204	8-729-402-42	TRANSISTOR UN5213	
Q211	8-729-810-13	TRANSISTOR UN5112	
Q212	8-729-402-45	TRANSISTOR UN5212	
Q217	8-729-402-42	TRANSISTOR UN5213	
Q218	8-729-402-42	TRANSISTOR UN5213	
Q219	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q221	8-729-013-15	TRANSISTOR 2SC4909-TL	(TRV60E/TRV70E)
Q222	8-729-403-35	TRANSISTOR UN5113	(TRV60E/TRV70E)
Q223	8-729-013-15	TRANSISTOR 2SC4909-TL	(TRV60E/TRV70E)
Q224	8-729-402-42	TRANSISTOR UN5213	(TRV60E/TRV70E)
Q225	8-729-015-76	TRANSISTOR UN5211	
Q226	8-729-807-86	TRANSISTOR 2SB1295-UL5	
Q227	8-729-402-42	TRANSISTOR UN5213	(TRV60E/TRV70E)
Q228	8-729-807-86	TRANSISTOR 2SB1295-UL5	(TRV60E/TRV70E)
Q230	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q232	8-729-420-24	TRANSISTOR 2SB1218A-QRS	(TRV30E/TRV40E/TRV50E)
Q235	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q236	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV30E/TRV40E/TRV50E)
Q237	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q238	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV30E/TRV40E/TRV50E)
Q240	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV30E/TRV40E/TRV50E)
Q241	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV30E/TRV40E/TRV50E)
Q242	8-729-420-24	TRANSISTOR 2SB1218A-QRS	(TRV30E/TRV40E/TRV50E)
Q243	8-729-402-42	TRANSISTOR UN5213	(TRV60E/TRV70E)
Q244	8-729-402-42	TRANSISTOR UN5213	
Q246	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV30E/TRV40E/TRV50E)
Q247	8-729-402-42	TRANSISTOR UN5213	(TRV30E/TRV40E/TRV50E)
Q248	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q249	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q253	8-729-420-56	TRANSISTOR UN511E	
Q254	8-729-403-35	TRANSISTOR UN5113	
Q255	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q257	8-729-230-63	TRANSISTOR 2SC4116-YG	(TRV30E/TRV40E/TRV50E)
Q258	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q259	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q260	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q262	8-729-402-42	TRANSISTOR UN5213	
Q263	8-729-402-42	TRANSISTOR UN5213	
Q264	8-729-402-42	TRANSISTOR UN5213	
Q265	8-729-823-16	TRANSISTOR 2SC4555-5.6.7	
Q266	8-729-402-42	TRANSISTOR UN5213	(TRV30E/TRV40E/TRV50E)
Q267	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q500	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q502	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q504	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q506	8-729-402-42	TRANSISTOR UN5213	
Q507	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q508	8-729-807-87	TRANSISTOR 2SB1295-UL6	
Q510	8-729-402-42	TRANSISTOR UN5213	
Q511	8-729-402-42	TRANSISTOR UN5213	
Q513	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q514	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q515	8-729-402-45	TRANSISTOR UN5212	(EXCEPT:TRV50E/TRV70E)
Q516	8-729-810-13	TRANSISTOR UN5112	(EXCEPT:TRV50E/TRV70E)
Q517	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q518	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q951	8-729-106-60	TRANSISTOR 2SB1115A	(EXCEPT:TRV50E/TRV70E)
Q952	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q956	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q958	8-729-230-63	TRANSISTOR 2SC4116-YG	

Ref.No.	Part No.	Description	Remark
Q959	8-729-402-42	TRANSISTOR UN5213	
Q960	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q971	8-729-402-45	TRANSISTOR UN5212	
Q972	8-729-810-13	TRANSISTOR UN5112	
Q1252	8-729-402-42	TRANSISTOR UN5213	
Q1253	8-729-823-16	TRANSISTOR 2SC4555-5.6.7	(TRV40E/TRV60E/TRV70E)
Q1254	8-729-823-16	TRANSISTOR 2SC4555-5.6.7	(TRV60E/TRV70E)
Q1258	8-729-230-63	TRANSISTOR 2SC4116-YG	
		< RESISTOR >	
R100	1-216-857-11	METAL CHIP 1M 5% 1/16W	(TRV60E/TRV70E)
R101	1-216-864-11	METAL CHIP 0 5% 1/16W	
R102	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R103	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R104	1-216-815-11	METAL CHIP 330 5% 1/16W	(TRV60E/TRV70E)
R104	1-216-819-11	METAL CHIP 680 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R105	1-216-816-11	METAL CHIP 390 5% 1/16W	(TRV60E/TRV70E)
R105	1-216-819-11	METAL CHIP 680 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R106	1-216-814-11	METAL CHIP 270 5% 1/16W	
R107	1-216-813-11	METAL CHIP 220 5% 1/16W	
R108	1-216-800-11	METAL GLAZE 18 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R108	1-216-801-11	METAL CHIP 22 5% 1/16W	(TRV60E/TRV70E)
R109	1-216-803-11	METAL CHIP 33 5% 1/16W	(TRV60E/TRV70E)
R109	1-216-805-11	METAL CHIP 47 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R110	1-216-818-11	METAL CHIP 560 5% 1/16W	
R111	1-218-875-11	METAL CHIP 15K 0.50% 1/16W	
R112	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R114	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R114	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	(TRV60E/TRV70E)
R117	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R118	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R119	1-216-824-11	METAL CHIP 1.8K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R119	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV60E/TRV70E)
R120	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R122	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R123	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R124	1-216-864-11	METAL CHIP 0 5% 1/16W	
R126	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R127	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R128	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R129	1-809-357-21	THERMISTOR, NTC (2125)	(TRV30E/TRV40E/TRV50E)
R130	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R131	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R132	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R133	1-216-819-11	METAL CHIP 680 5% 1/16W	
R134	1-216-834-11	METAL CHIP 12K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R135	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R136	1-216-820-11	METAL CHIP 820 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R137	1-216-821-11	METAL CHIP 1K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R138	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R139	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R140	1-216-813-11	METAL CHIP 220 5% 1/16W	
R141	1-216-817-11	METAL CHIP 470 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R142	1-216-818-11	METAL CHIP 560 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R143	1-216-808-11	METAL CHIP 82 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R144	1-216-818-11	METAL CHIP 560 5% 1/16W	
R146	1-216-809-11	METAL CHIP 100 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R147	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R148	1-216-813-11	METAL CHIP 220 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R149	1-216-813-11	METAL CHIP 220 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R150	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R151	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R152	1-216-824-11	METAL CHIP 1.8K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R153	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	(TRV30E/TRV40E)
R153	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV50E)
R154	1-216-821-11	METAL CHIP 1K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R155	1-216-817-11	METAL CHIP 470 5% 1/16W	(TRV60E/TRV70E)
R156	1-216-817-11	METAL CHIP 470 5% 1/16W	(TRV60E/TRV70E)
R157	1-216-817-11	METAL CHIP 470 5% 1/16W	(TRV60E/TRV70E)

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Ref.No.	Part No.	Description	Remark
R158	1-216-836-11	METAL CHIP 18K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R159	1-216-836-11	METAL CHIP 18K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R160	1-216-818-11	METAL CHIP 560 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R161	1-216-821-11	METAL CHIP 1K 5% 1/16W	(TRV60E/TRV70E)
R162	1-216-818-11	METAL CHIP 560 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R163	1-216-821-11	METAL CHIP 1K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R164	1-216-804-11	METAL CHIP 39 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R165	1-216-821-11	METAL CHIP 1K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R166	1-216-815-11	METAL CHIP 330 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R167	1-216-821-11	METAL CHIP 1K 5% 1/16W	(TRV60E/TRV70E)
R168	1-216-815-11	METAL CHIP 330 5% 1/16W	(TRV60E/TRV70E)
R169	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV60E/TRV70E)
R171	1-216-824-11	METAL CHIP 1.8K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R173	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	(TRV60E/TRV70E)
R174	1-216-816-11	METAL CHIP 390 5% 1/16W	(TRV60E/TRV70E)
R175	1-216-815-11	METAL CHIP 330 5% 1/16W	(TRV60E/TRV70E)
R175	1-216-820-11	METAL CHIP 820 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R178	1-216-809-11	METAL CHIP 100 5% 1/16W	
R179	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R180	1-216-809-11	METAL CHIP 100 5% 1/16W	
R181	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R182	1-216-817-11	METAL CHIP 470 5% 1/16W	(TRV60E/TRV70E)
R185	1-216-847-11	METAL CHIP 150K 5% 1/16W	
R186	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R187	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R188	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R189	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R190	1-216-817-11	METAL CHIP 470 5% 1/16W	(TRV60E/TRV70E)
R191	1-216-815-11	METAL CHIP 330 5% 1/16W	(TRV60E/TRV70E)
R193	1-216-815-11	METAL CHIP 330 5% 1/16W	
R194	1-216-818-11	METAL CHIP 560 5% 1/16W	
R195	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R196	1-216-836-11	METAL CHIP 18K 5% 1/16W	

Ref.No.	Part No.	Description	Remark
R201	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R202	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	
R203	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R206	1-216-817-11	METAL CHIP 470 5% 1/16W	(TRV60E/TRV70E)
R206	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R207	1-216-804-11	METAL CHIP 39 5% 1/16W	
R208	1-216-821-11	METAL CHIP 1K 5% 1/16W	(TRV60E/TRV70E)
R209	1-216-814-11	METAL CHIP 270 5% 1/16W	
R210	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R211	1-216-803-11	METAL CHIP 33 5% 1/16W	
R213	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R214	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R215	1-216-819-11	METAL CHIP 680 5% 1/16W	
R216	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R217	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R218	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R219	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R224	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R226	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R228	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R229	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R230	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R231	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R232	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R234	1-216-864-11	METAL CHIP 0 5% 1/16W	
R235	1-218-877-11	METAL CHIP 18K 0.50% 1/16W	
R245	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R246	1-216-819-11	METAL CHIP 680 5% 1/16W	
R247	1-216-815-11	METAL CHIP 330 5% 1/16W	
R253	1-218-849-11	METAL CHIP 1.2K 0.50% 1/16W	
R255	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R256	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R259	1-218-859-11	METAL CHIP 3.3K 0.50% 1/16W	
R261	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R262	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R263	1-218-839-11	METAL GLAZE 470 0.50% 1/16W	
R264	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	(TRV60E/TRV70E)
R265	1-216-818-11	METAL CHIP 560 5% 1/16W	
R266	1-218-837-11	METAL GLAZE 390 0.50% 1/16W	(TRV60E/TRV70E)
R269	1-216-864-11	METAL CHIP 0 5% 1/16W	
R270	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R271	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R272	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R273	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R274	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R279	1-216-819-11	METAL CHIP 680 5% 1/16W	

Ref. No.	Part No.	Description				Remark
R280	1-216-841-11	METAL CHIP	47K	5%	1/16W	(TRV60E/TRV70E)
R282	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	(TRV60E/TRV70E)
R283	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R284	1-216-295-91	CONDUCTOR, CHIP (2012)				(TRV30E/TRV40E/TRV50E)
R285	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R286	1-216-818-11	METAL CHIP	560	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R287	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV60E/TRV70E)
R288	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R289	1-216-810-11	METAL CHIP	120	5%	1/16W	
R291	1-216-833-11	METAL CHIP	10K	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R292	1-216-864-11	METAL CHIP	0	5%	1/16W	
R293	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R296	1-216-815-11	METAL CHIP	330	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R297	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R300	1-216-817-11	METAL CHIP	470	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R302	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R303	1-216-809-11	METAL CHIP	100	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R304	1-216-833-11	METAL CHIP	10K	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R305	1-216-820-11	METAL CHIP	820	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R307	1-216-813-11	METAL CHIP	220	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R308	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R309	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R311	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R312	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R313	1-216-820-11	METAL CHIP	820	5%	1/16W	
R314	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R315	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R316	1-216-815-11	METAL CHIP	330	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R317	1-216-820-11	METAL CHIP	820	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R318	1-216-820-11	METAL CHIP	820	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R319	1-216-818-11	METAL CHIP	560	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R320	1-216-817-11	METAL CHIP	470	5%	1/16W	
R321	1-216-821-11	METAL CHIP	1K	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R322	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R323	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R324	1-216-820-11	METAL CHIP	820	5%	1/16W	
R325	1-216-822-11	METAL CHIP	1.2K	5%	1/16W	
R327	1-216-820-11	METAL CHIP	820	5%	1/16W	
R328	1-216-820-11	METAL CHIP	820	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R329	1-216-833-11	METAL CHIP	10K	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R330	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R331	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R332	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R338	1-216-811-11	METAL CHIP	150	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R339	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R343	1-216-853-11	METAL CHIP	470K	5%	1/16W	(TRV60E/TRV70E)
R346	1-216-857-11	METAL CHIP	1M	5%	1/16W	(TRV60E/TRV70E)
R347	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R350	1-216-844-11	METAL CHIP	82K	5%	1/16W	(TRV60E/TRV70E)
R351	1-216-810-11	METAL CHIP	120	5%	1/16W	(TRV60E/TRV70E)
R354	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R355	1-216-842-11	METAL CHIP	56K	5%	1/16W	
R356	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R357	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R358	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R359	1-216-817-11	METAL CHIP	470	5%	1/16W	
R360	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R361	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R362	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R363	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R365	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R366	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV30E/TRV40E/TRV50E)
R368	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R373	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R375	1-216-864-11	METAL CHIP	0	5%	1/16W	(TRV60E/TRV70E)
R380	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R381	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R383	1-216-842-11	METAL CHIP	56K	5%	1/16W	
R387	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	

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Ref.No.	Part No.	Description	Remark
R390	1-216-818-11	METAL CHIP 560 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R391	1-216-864-11	METAL CHIP 0 5% 1/16W	
R395	1-216-864-11	METAL CHIP 0 5% 1/16W	
R398	1-216-820-11	METAL CHIP 820 5% 1/16W	
R399	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R501	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R502	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R503	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R505	1-216-864-11	METAL CHIP 0 5% 1/16W	
R506	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R507	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R508	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R509	1-216-851-11	METAL CHIP 330K 5% 1/16W	
R510	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R511	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R512	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R513	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV60E/TRV70E)
R513	1-216-839-11	METAL CHIP 33K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R514	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R515	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R516	1-216-845-11	METAL CHIP 100K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R517	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R518	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R519	1-216-817-11	METAL CHIP 470 5% 1/16W	
R520	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R521	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R522	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R523	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R524	1-216-809-11	METAL CHIP 100 5% 1/16W	
R525	1-216-853-11	METAL CHIP 470K 5% 1/16W	(TRV60E/TRV70E)
R525	1-216-856-11	METAL CHIP 820K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R526	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R527	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R528	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R530	1-216-864-11	METAL CHIP 0 5% 1/16W	
R531	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	(TRV30E/TRV40E)
R531	1-216-833-11	METAL CHIP 10K 5% 1/16W	(TRV50E/TRV60E/TRV70E)
R532	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R534	1-217-671-11	METAL CHIP 1 5% 1/10W	
R535	1-217-671-11	METAL CHIP 1 5% 1/10W	
R536	1-217-671-11	METAL CHIP 1 5% 1/10W	
R537	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	(TRV60E/TRV70E)

Ref.No.	Part No.	Description	Remark
R537	1-216-836-11	METAL CHIP 18K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R538	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R539	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV60E/TRV70E)
R539	1-216-841-11	METAL CHIP 47K 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R540	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R541	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R542	1-216-864-11	METAL CHIP 0 5% 1/16W	
R543	1-216-864-11	METAL CHIP 0 5% 1/16W	
R544	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R545	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R546	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R547	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R548	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R549	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R551	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R552	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R553	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R554	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R555	1-216-864-11	METAL CHIP 0 5% 1/16W	
R556	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R557	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R558	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R561	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R562	1-216-851-11	METAL CHIP 330K 5% 1/16W	
R563	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R564	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R566	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R567	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R569	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R570	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R572	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R573	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R575	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV60E/TRV70E)
R577	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R578	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R579	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R580	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R581	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R582	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R584	1-216-864-11	METAL CHIP 0 5% 1/16W	
R585	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R586	1-216-849-11	METAL CHIP 220K 5% 1/16W	
R587	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R588	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R589	1-216-864-11	METAL CHIP 0 5% 1/16W	
R590	1-216-845-11	METAL CHIP 100K 5% 1/16W	(TRV30E/TRV40E/TRV50E)

Ref. No.	Part No.	Description	Remark
R591	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R592	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R595	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R596	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R597	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R599	1-216-864-11	METAL CHIP 0 5% 1/16W	
R954	1-216-138-00	METAL CHIP 3.3 5% 1/8W	
R955	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R956	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R957	1-216-820-11	METAL CHIP 820 5% 1/16W	
R961	1-216-818-11	METAL CHIP 560 5% 1/16W	
R962	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R964	1-216-822-11	METAL CHIP 1.2K 5% 1/16W	
R965	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R966	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R967	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	
R968	1-216-834-11	METAL CHIP 12K 5% 1/16W	
R969	1-216-817-11	METAL CHIP 470 5% 1/16W	
R972	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R1251	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R1252	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R1259	1-216-821-11	METAL CHIP 1K 5% 1/16W	(TRV60E/TRV70E)
R1260	1-216-815-11	METAL CHIP 330 5% 1/16W	(TRV60E/TRV70E)
R1265	1-216-804-11	METAL CHIP 39 5% 1/16W	(TRV60E/TRV70E)
R1266	1-216-803-11	METAL CHIP 33 5% 1/16W	(TRV60E/TRV70E)
R1267	1-216-804-11	METAL CHIP 39 5% 1/16W	(TRV60E/TRV70E)
R1268	1-216-803-11	METAL CHIP 33 5% 1/16W	(TRV60E/TRV70E)
R1270	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1275	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1279	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV60E/TRV70E)
R1280	1-216-837-11	METAL CHIP 22K 5% 1/16W	(TRV60E/TRV70E)
R1281	1-216-821-11	METAL CHIP 1K 5% 1/16W	(TRV50E/TRV70E)
R1281	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	(TRV30E/TRV40E/TRV60E)
R1282	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R1284	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1285	1-216-864-11	METAL CHIP 0 5% 1/16W	(TRV30E/TRV40E/TRV50E)
R1286	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	(TRV60E/TRV70E)
R1287	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	(TRV60E/TRV70E)
R1400	1-216-864-11	METAL CHIP 0 5% 1/16W	

Ref. No.	Part No.	Description	Remark
R1401	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1403	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R1404	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R1405	1-216-819-11	METAL CHIP 680 5% 1/16W	
R1406	1-216-864-11	METAL CHIP 0 5% 1/16W	
R1407	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R1409	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R1410	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R1411	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R1412	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R1413	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R2011	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R2012	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R2013	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R2014	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R2015	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R2016	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R2017	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R2018	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R2019	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R2020	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R2021	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R2022	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R2023	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R2024	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R2025	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R2026	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R2027	1-216-864-11	METAL CHIP 0 5% 1/16W	
R2028	1-216-864-11	METAL CHIP 0 5% 1/16W	
R2029	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R2030	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R2031	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R2032	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R2033	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R2034	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R2035	1-216-864-11	METAL CHIP 0 5% 1/16W	
R2036	1-216-864-11	METAL CHIP 0 5% 1/16W	
R2037	1-216-864-11	METAL CHIP 0 5% 1/16W	
R2038	1-216-864-11	METAL CHIP 0 5% 1/16W	
R2039	1-216-864-11	METAL CHIP 0 5% 1/16W	
R2040	1-216-864-11	METAL CHIP 0 5% 1/16W	
R2041	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R2042	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R2043	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R2044	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R2045	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R2046	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R2047	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R2048	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R2049	1-216-821-11	METAL CHIP 1K 5% 1/16W	

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Ref. No.	Part No.	Description				Remark
R2050	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2051	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2052	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2053	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R2054	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R2055	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2056	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2057	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2058	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2059	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2060	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2061	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2062	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2063	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2064	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2065	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2066	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2067	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2068	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2069	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2071	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2072	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2073	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2074	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2075	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2076	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2077	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2078	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2079	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2080	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2081	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2082	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2083	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2084	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2085	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2086	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2087	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2088	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2089	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2090	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2091	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2092	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2093	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2094	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2095	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2096	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2097	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R2098	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R2099	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2100	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2101	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2102	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R2103	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R2104	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	

< VIBRATOR >

Ref. No.	Part No.	Description	Remark
X201	1-579-366-11	VIBRATOR, CRYSTAL (4.43MHz)	
X501	1-579-550-11	VIBRATOR, CRYSTAL (32kHz)	
X502	1-760-315-11	VIBRATOR, CRYSTAL (11.719MHz)	
XTL501	1-579-369-21	VIBRATOR (10MHz)	

6-3. VIDEO SECTION ADJUSTMENTS

3-7. LCD SYSTEM ADJUSTMENTS

8. V COM Adjustment

Adjust to the proper DC bias of the common polarity drive signal of the LCD panel. If it is not correct, the image will be rough, flickers will be produced easily, and vertical lines will stand out.

Mode	Playback • pause
Signal	Alignment tape: For checking operations (WR5-5CSP) Color bar section
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	B7

Adjusting method:

1) Set data: 01 to page: 1, address: 00, and press the PAUSE button of the adjusting remote commander.
2) Set data: 6D to page: D, address: 1B, and press the PAUSE button of the adjusting remote commander.
3) Set the playback pause state using the key on the main unit.
4) Change the data using the PLAY and STOP buttons of the adjusting remote commander, and observe the pattern of the noise bar. Continuously press the PLAY button when a pattern representing a head clogging is observed. There should be a point where black dots can be seen clearly. At this time, assume the data as DA. In the same way, piess the STOP button continuously. There sould be a point where black dots can be seen clearly. At this time, assume the data as DB.
5) Change DA and DB to the hexadecimal notation and obtain DA' and DB'.
   (See Table 6-13. "Hexadecimal notation-Decimal notation".)
6) Calculate DC' using the following equation (for calculating hexadecimal notation).
   DC'=(DA'+DB') ÷ 2
7) Convert DC' to a hexadecimal notation and obtain DC.
   (Raise decimals to the next whole number)
8) Set the data of page: D, address: B7 to DC, and press the PAUSE button of the adjusting remote commander.
9) Set data: 6F to page: D, address: 1B, and press the PAUSE button of the adjusting remote commander.
10) Set data: 00 to page: 1, address: 00, and press the PAUSE button of the adjusting remote commander.

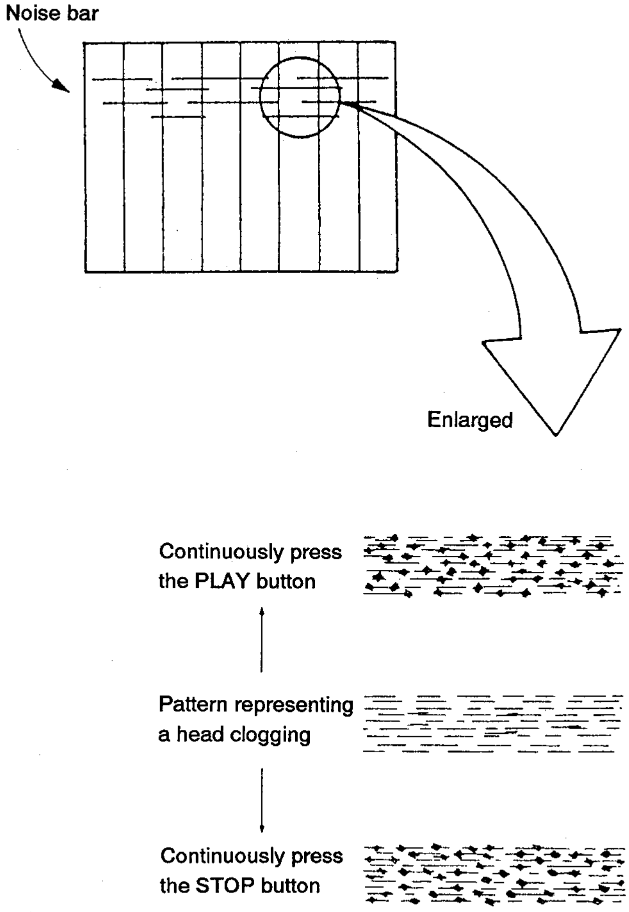

Noise bar
Enlarged
Continuously press the PLAY button
Pattern representing a head clogging
Continuously press the STOP button

Fig. 6-3-52.

CCD-TRV30E/TRV50E/TRV70E

(Included CCD-TRV40E/TRV60E) **RMT-708**

SONY

SERVICE MANUAL

AEP Model
UK Model
CCD-TRV30E/TRV40E/TRV60E/TRV70E
Australian Model
E Model
Hong Kong Model
CCD-TRV30E/TRV40E/TRV50E/TRV70E
Tourist Model
CCD-TRV30E/TRV50E

SUPPLEMENT-2

File this supplement with Service manual.
(EV-503276, EVP-500419)

Subject: Addition of "4" LCD Specifications"
Use of stereo IC for monaural circuit

1. Addition of 4" LCD Specifications

- **Differentiating the 4" LCD Type**

There are now two types of 4" LCDs due to the addition of specifications. These LCDs are not interchangeable and consequently, their PD-62 board number differs. The following table shows their PC board numbers.

TYPE I	TYPE II
1-656-433-11	1-656-433-31

2. Use of stereo IC for monaural circuit.

- In some units currently being manufactured, the IC130 on the AU-185 board (AFM AUDIO PROCESS) for stereo is also used for the monaural circuit.
- Subsequently, 35 constants on the printed wiring board and page D data have been changed.

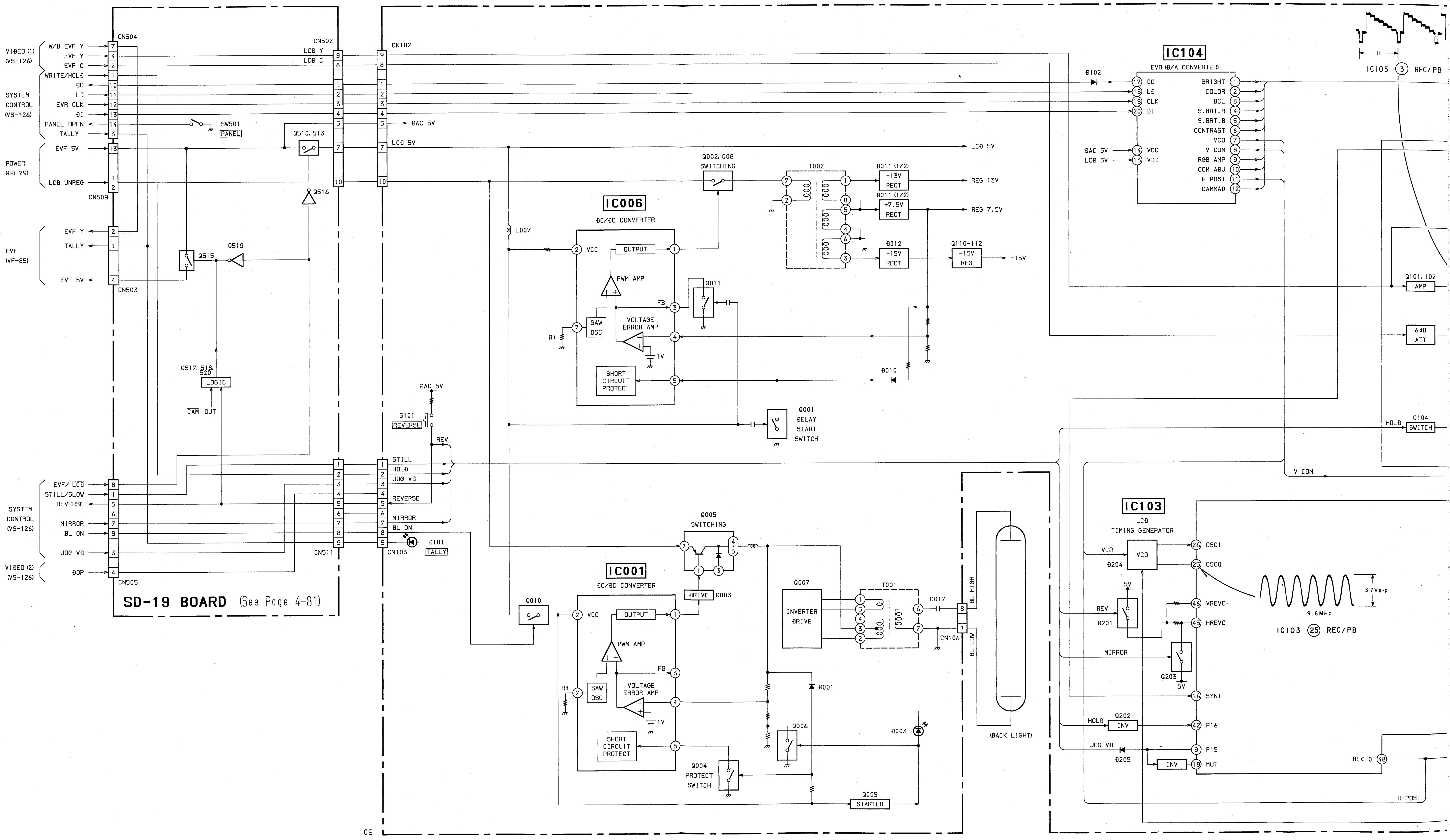
AU-185 Board Related Models

MODEL	Destination	SERIAL No.
CCD-TRV30E	AEP	21173 to
	AEP	1045851 to
	Australian	1051751 to
	E	1043688 to
	UK	1045849 to
	Hong Kong	1058951 to
CCD-TRV40E	AEP	1004751 to
	E	1005751 to
	Hong Kong	1004051 to
	Australian	1012201 to

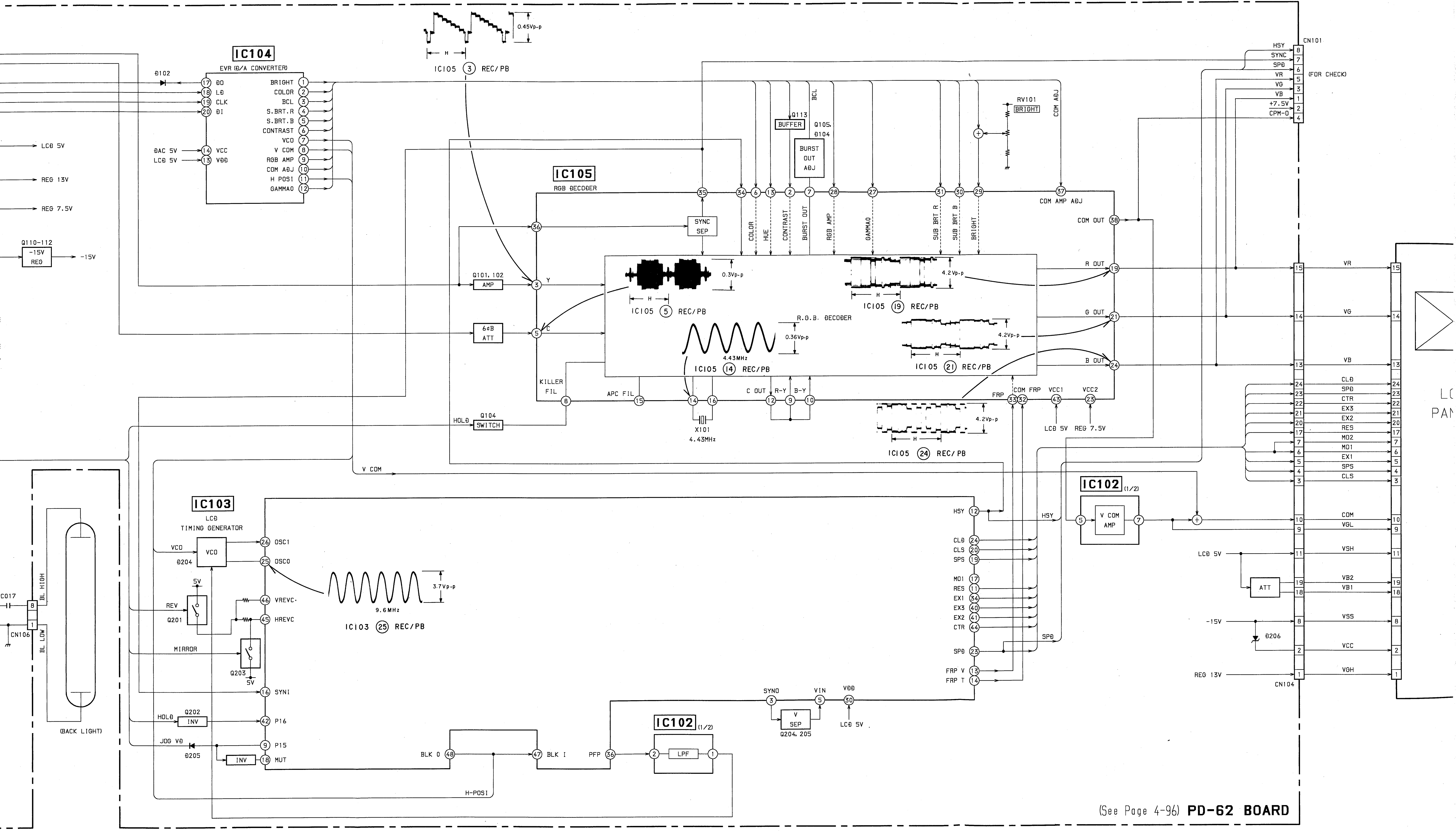
Reference: Differentiating Current Products from Products with Changed Specifications
Current products:
IC130 of AU-185 board is labeled AN3996
Products with changed specifications:
IC130 of AU-185 board is labeled AN3988

SECTION 3
BLOCK DIAGRAMS

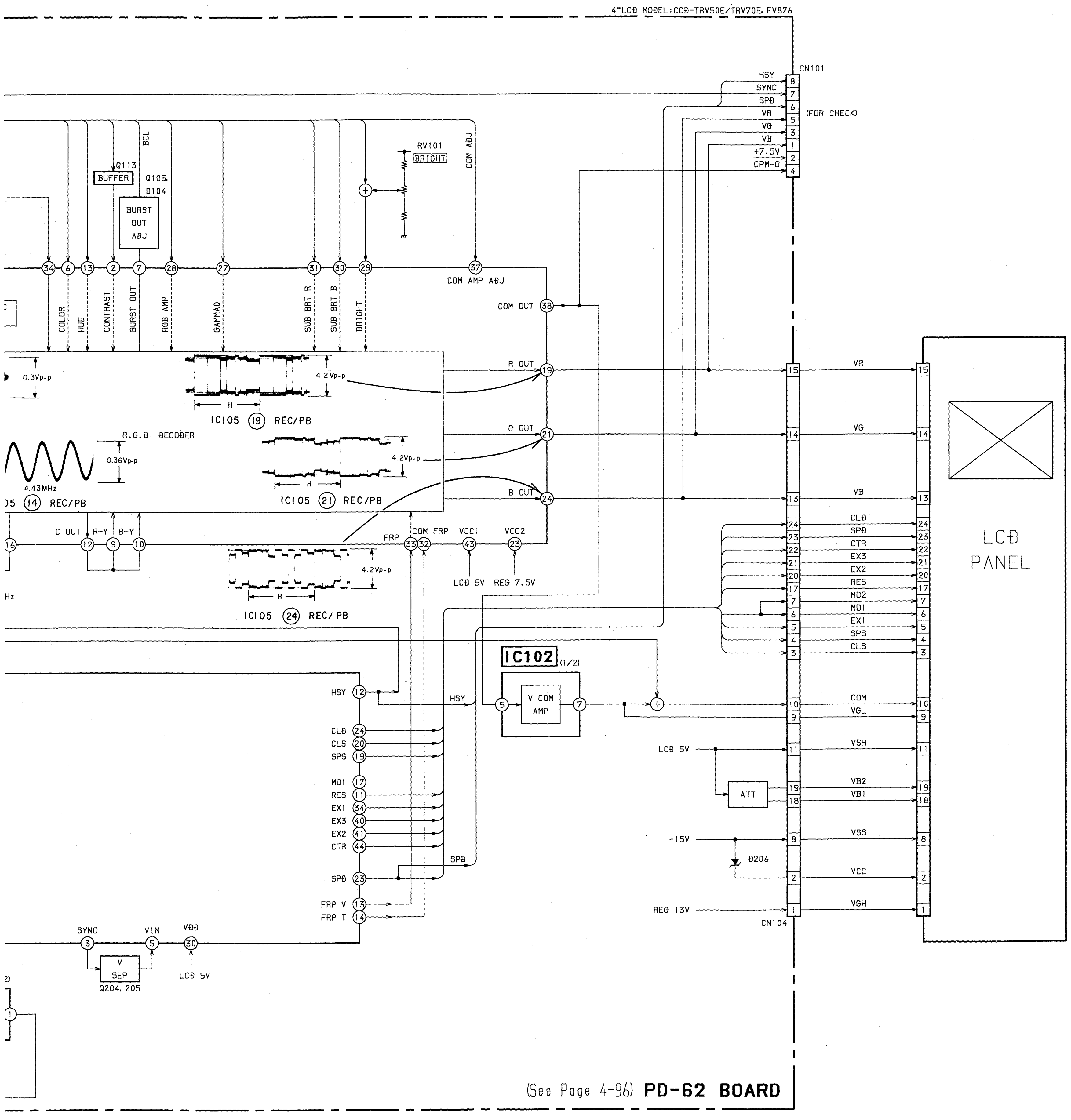
3-10. 4" LCD BLOCK DIAGRAM


VIDEO (1) (VS-126)
W/B EVF Y
EVF Y
EVF C
SYSTEM CONTROL (VS-126)
WRITE/HOLD
DO
LD
EVR CLK
DI
PANEL OPEN
TALLY
POWER (DD-79)
EVF 5V
LCD UNREG
CN504
CN509
SW501
PANEL
Q510, 513
Q516
CN502
LCD Y
LCD C
EVF (VF-85)
EVF Y
TALLY
EVF 5V
CN503
Q515
Q519
Q517, 518, 520
LOGIC
CAM OUT
SYSTEM CONTROL (VS-126)
EVF/LCD
STILL/SLOW
REVERSE
MIRROR
BL ON
JOG VD
VIDEO (2) (VS-126)
DOP
CN505
CN511
SD-19 BOARD (See Page 4-81)
CN102
DAC 5V
LCD 5V
LCD 5V
L007
IC006
DC/DC CONVERTER
VCC
OUTPUT
PWM AMP
FB
SAW OSC
VOLTAGE ERROR AMP
1V
Rt
SHORT CIRCUIT PROTECT
Q011
Q002, 008
SWITCHING
T002
D011 (1/2)
+13V RECT
REG 13V
D011 (1/2)
+7.5V RECT
REG 7.5V
D012
-15V RECT
Q110-112
-15V REG
-15V
D010
Q001
DELAY START SWITCH
DAC 5V
S101
REVERSE
REV
STILL
HOLD
JOG VD
REVERSE
MIRROR
BL ON
D101
TALLY
CN103
09
Q005
SWITCHING
DRIVE
Q003
Q010
IC001
DC/DC CONVERTER
VCC
OUTPUT
PWM AMP
FB
Rt
SAW OSC
VOLTAGE ERROR AMP
1V
SHORT CIRCUIT PROTECT
Q004
PROTECT SWITCH
Q007
INVERTER DRIVE
T001
C017
Q006
D001
D003
Q009
STARTER
CN106
BL HIGH
BL LOW
(BACK LIGHT)
IC104
EVR (D/A CONVERTER)
D102
DO
LD
CLK
DI
DAC 5V
LCD 5V
VCC
VDD
BRIGHT
COLOR
BCL
S.BRT.R
S.BRT.B
CONTRAST
VCO
V COM
RGB AMP
COM ADJ
H POSI
GAMMAO
H
IC105 ③ REC/PB
Q101, 102
AMP
6dB ATT
HOLD
Q104
SWITCH
V COM
IC103
LCD TIMING GENERATOR
VCO
D204
VCO
OSC1
OSCO
5V
REV
Q201
VREVC
HREVC
MIRROR
Q203
5V
SYNI
HOLD
Q202
INV
P16
JOG VD
D205
P15
INV
MUT
3.7Vp-p
9.6MHz
IC103 ㉕ REC/PB
BLK 0
H-POSI

4"LCD MODEL:CCD-TRV50E/TRV70E, FV876


IC104
EVR (D/A CONVERTER)
D0
LD
CLK
DI
VCC
VDD
BRIGHT
COLOR
BCL
S.BRT.R
S.BRT.B
CONTRAST
VCO
V COM
RGB AMP
COM ADJ
H POSI
GAMMA0
D102
DAC 5V
LCD 5V
LCD 5V
REG 13V
REG 7.5V
Q110-112
-15V REG
-15V
0.45Vp-p
IC105 ③ REC/PB
IC105
RGB DECODER
Q113 BUFFER
BCL
Q105, D104
BURST OUT ADJ
RV101 BRIGHT
COM ADJ
SYNC SEP
COLOR
HUE
CONTRAST
BURST OUT
RGB AMP
GAMMA0
SUB BRT R
SUB BRT B
BRIGHT
COM AMP ADJ
COM OUT
R OUT
G OUT
B OUT
Q101, 102 AMP
6dB ATT
Y
C
0.3Vp-p
IC105 ⑤ REC/PB
4.2Vp-p
IC105 ⑲ REC/PB
R.G.B. DECODER
0.36Vp-p
4.43MHz
IC105 ⑭ REC/PB
4.2Vp-p
IC105 ㉑ REC/PB
KILLER FIL
APC FIL
C OUT
R-Y
B-Y
FRP
COM FRP
VCC1
VCC2
LCD 5V
REG 7.5V
HOLD
Q104 SWITCH
X101 4.43MHz
4.2Vp-p
IC105 ㉔ REC/PB
V COM
HSY
SYNC
SPD
VR
VG
VB
+7.5V
CPM-D
CN101
(FOR CHECK)
VR
VG
VB
CLD
SPD
CTR
EX3
EX2
RES
MO2
MO1
EX1
SPS
CLS
COM
VGL
VSH
VB2
VB1
VSS
VCC
VGH
LC
PAN
IC102 (1/2)
V COM AMP
HSY
LCD 5V
ATT
-15V
D206
REG 13V
CN104
IC103
LCD TIMING GENERATOR
VCO
D204
VCO
OSC1
OSCO
5V
REV
Q201
VREVC
HREVC
MIRROR
Q203
5V
SYNI
HOLD
Q202 INV
P16
JOG VD
D205
P15
INV
MUT
3.7Vp-p
9.6MHz
IC103 ㉕ REC/PB
HSY
CLD
CLS
SPS
MO1
RES
EX1
EX3
EX2
CTR
SPD
SPD
FRP V
FRP T
SYNO
VIN
VDD
V SEP
Q204, 205
LCD 5V
BLK O
BLK I
PFP
IC102 (1/2)
LPF
H-POSI
C017
CN106
BL HIGH
BL LOW
(BACK LIGHT)

(See Page 4-96) **PD-62 BOARD**


4"LCD MODEL:CCD-TRV50E/TRV70E, FV876
CN101
HSY
SYNC
SPD
VR
VG
VB
+7.5V
CPM-O
(FOR CHECK)
RV101
BRIGHT
COM ADJ
Q113
BUFFER
Q105, Q104
BURST OUT ADJ
BCL
COLOR
HUE
CONTRAST
BURST OUT
RGB AMP
GAMMA0
SUB BRT R
SUB BRT B
BRIGHT
COM AMP ADJ
COM OUT
R OUT
G OUT
B OUT
0.3Vp-p
4.2Vp-p
IC105 (19) REC/PB
R.G.B. DECODER
0.36Vp-p
4.43MHz
IC105 (21) REC/PB
(14) REC/PB
C OUT
R-Y
B-Y
FRP
COM FRP
VCC1
VCC2
LCD 5V
REG 7.5V
IC105 (24) REC/PB
IC102 (1/2)
V COM AMP
HSY
CLD
CLS
SPS
MO1
RES
EX1
EX3
EX2
CTR
SPD
FRP V
FRP T
SYNO
VIN
VDD
V SEP
Q204, 205
LCD 5V
CN104
VR
VG
VB
CLD
SPD
CTR
EX3
EX2
RES
MO2
MO1
EX1
SPS
CLS
COM
VGL
VSH
VB2
VB1
VSS
VCC
VGH
LCD 5V
ATT
-15V
D206
REG 13V
LCD PANEL
(See Page 4-96) PD-62 BOARD

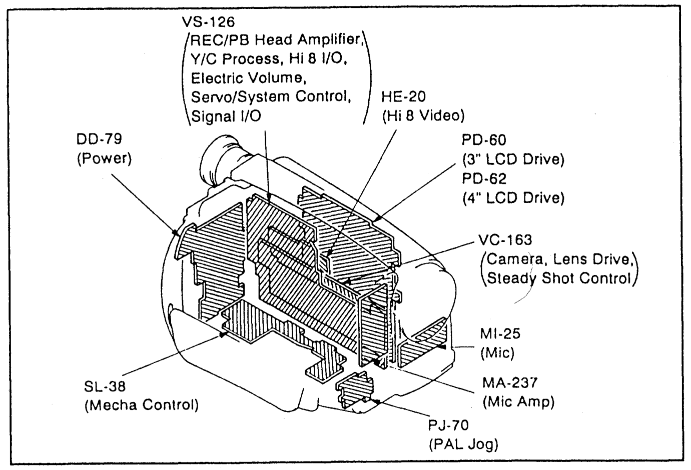
SECTION 4

PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

PD-62 BOARD

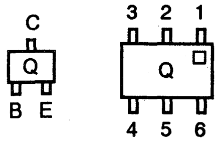
C001	D-15
C002	D-15
C003	D-4
C004	C-16
C005	D-3
C006	D-4
C007	D-4
C008	C-4
C009	C-3
C011	D-3
C013	D-16
C014	C-16
C015	D-17
C016	D-17
C017	B-17
C060	A-16
C061	B-16
C062	C-16
C063	B-15
C064	B-15
C065	A-4
C066	C-4
C068	B-15
C069	C-4
C070	C-4
C071	C-16
C072	C-4
C073	C-4
C074	C-16
C075	B-15
C076	B-15
C077	B-4
C078	B-4
C079	B-3
C080	B-3
C081	A-3
C101	E-12
C102	E-12
C103	D-12
C104	E-12
C105	D-12
C107	D-13
C109	D-6
C111	D-13
C113	D-13
C114	E-6
C115	D-12
C116	D-12
C119	E-14
C121	E-14
C122	D-12
C123	E-15
C124	C-6
C125	C-6
C126	C-7
C127	C-12
C128	C-12
C129	C-14
C130	D-6
C132	C-12
C135	C-13
C136	C-13
C137	C-6
C138	C-6
C140	C-13
C141	C-6
C142	C-6
C144	C-12
C152	B-6
C202	C-14
C203	B-5
C204	B-5
C206	C-13
C207	C-14
C208	C-13
C209	C-15
C210	D-14
C211	B-5
C212	B-5
C213	B-5
C214	D-14
C215	C-14
C217	D-5
C218	D-5
C219	A-5
C220	A-5
C221	B-6
C222	A-6
C223	A-6
C224	A-6
CN101	E-13
CN102	D-11
CN103	C-11
CN104	A-13
CN106	A-17
D001	D-3
D002	C-16
D003	A-2
D010	B-4
D011	B-4
D012	B-15
D013	B-16
D018	B-3
D101	D-1
D102	E-14
D103	D-18
D104	C-6
D201	C-14
D204	B-5
D205	B-6
D206	A-6
IC001	D-4
IC006	B-4
IC102	D-15
IC103	B-14
IC104	E-14
IC105	C-13
L001	C-15
L002	D-15
L003	D-16
L007	C-16
L008	C-15
L009	B-16
L010	B-16
L011	B-16
L101	E-12
L102	E-12
L103	D-13
L104	C-6
L105	C-6
L201	B-5
L202	B-5
L203	B-15
L204	B-5
Q001	B-4
Q002	C-3
Q003	D-4
Q004	D-3
Q005	D-3
Q006	C-4
Q007	D-17
Q008	C-4
Q009	C-4
Q010	B-3
Q011	B-16
Q101	D-12
Q102	E-12
Q104	B-7
Q105	C-6
Q110	A-5
Q111	B-5
Q112	A-5
Q201	D-5
Q202	C-5
Q203	C-5
Q204	C-13
Q205	B-14
Q208	B-5
R001	D-3
R002	D-3
R003	D-4
R004	C-4
R005	D-4
R006	D-4
R007	C-3
R008	C-4
R009	C-3
R010	D-3
R011	C-4
R012	C-16
R013	D-3
R014	D-2
R015	C-4
R016	C-4
R017	A-4
R018	A-4
R019	B-4
R020	B-4
R021	A-15
R022	A-4
R023	C-4
R024	C-4
R025	C-4
R026	C-16
R027	A-3
R036	A-16
R060	B-16
R098	B-15
R099	C-4
R100	B-4
R101	E-17
R103	D-12
R104	D-12
R105	D-12
R106	E-12
R107	D-12
R108	D-12
R109	E-12
R110	D-12
R111	D-13
R112	D-6
R113	D-6
R114	D-6
R115	D-13
R116	E-6
R117	D-6
R118	D-6
R120	D-13
R121	D-6
R122	D-12
R123	D-13
R124	D-14
R125	D-12
R126	E-14
R127	D-12
R129	E-14
R132	D-14
R133	C-12
R134	E-14
R137	D-6
R138	D-12
R139	D-14
R140	C-12
R141	D-12
R142	E-17
R143	E-17
R144	D-14
R146	D-14
R147	C-12
R148	D-6
R149	D-14
R153	C-13
R154	C-6
R155	B-6
R156	D-14
R160	C-6
R161	C-13
R162	C-13
R163	C-13
R166	C-7
R167	C-14
R168	C-14
R169	C-12
R170	C-12
R177	E-13
R178	C-6
R180	E-12
R184	B-15
R191	A-5
R192	B-5
R193	A-5
R195	B-5
R196	B-5
R197	B-5
R198	C-12
R201	E-11
R202	C-5
R203	C-5
R204	C-14
R205	C-5
R206	D-5
R207	C-5
R208	C-14
R209	C-14
R210	C-13
R211	C-5
R213	B-13
R214	C-13
R215	B-14
R216	C-15
R218	B-5
R220	B-4
R221	B-5
R222	B-6
R223	B-5
R224	D-14
R225	C-14
R226	C-14
R227	C-15
R228	C-14
R229	B-14
R232	B-14
R233	C-15
R234	D-15
R235	D-5
R236	D-5
R237	D-5
R238	D-5
R239	D-5
R240	D-5
R241	A-6
R242	A-6
R243	A-6
R244	B-6
R247	D-5
R248	A-6
R249	A-6
R251	A-6
R252	B-14
R253	B-14
R254	B-14
R255	B-13
R256	B-13
R257	B-13
R258	B-13
R260	B-13
R261	C-15
RV002	B-15
RV101	E-18
S101	D-9
T001	C-17
T002	C-15
X101	C-12


VS-126
(REC/PB Head Amplifier, Y/C Process, Hi 8 I/O, Electric Volume, Servo/System Control, Signal I/O)
HE-20
(Hi 8 Video)
DD-79
(Power)
PD-60
(3" LCD Drive)
PD-62
(4" LCD Drive)
VC-163
(Camera, Lens Drive, Steady Shot Control)
MI-25
(Mic)
MA-237
(Mic Amp)
SL-38
(Mecha Control)
PJ-70
(PAL Jog)

PD-62 (4" LCD DRIVE) PRINTED WIRING BOARD

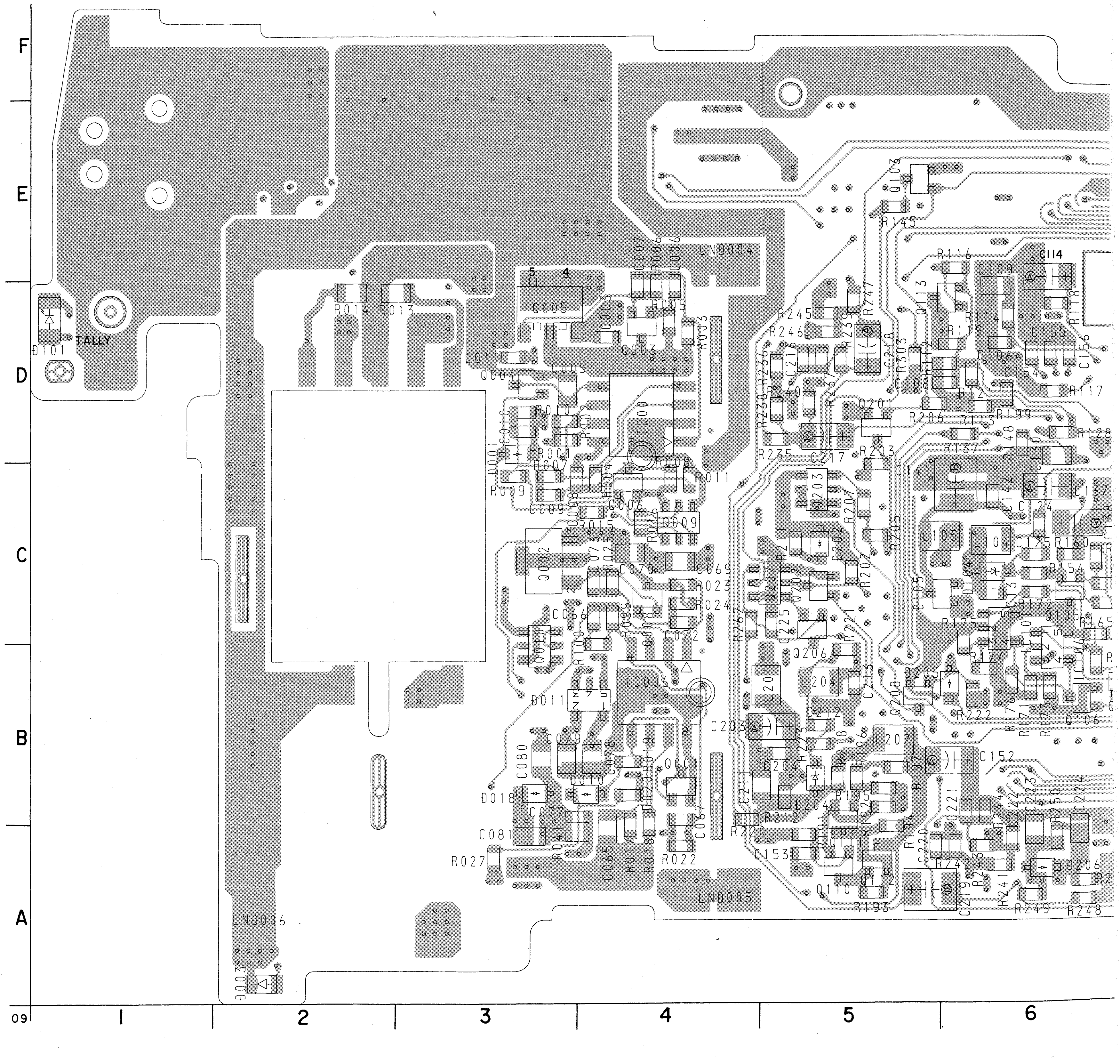
— Ref. No. PD-62 BOARD: 7000 series —

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor

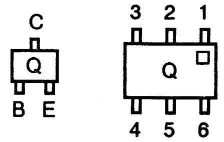

C
Q
B
E
3
2
1
Q
4
5
6

There are few cases that the part isn
printed on this diagram.

PD-62 BOARD (CONDUCTOR SIDE)

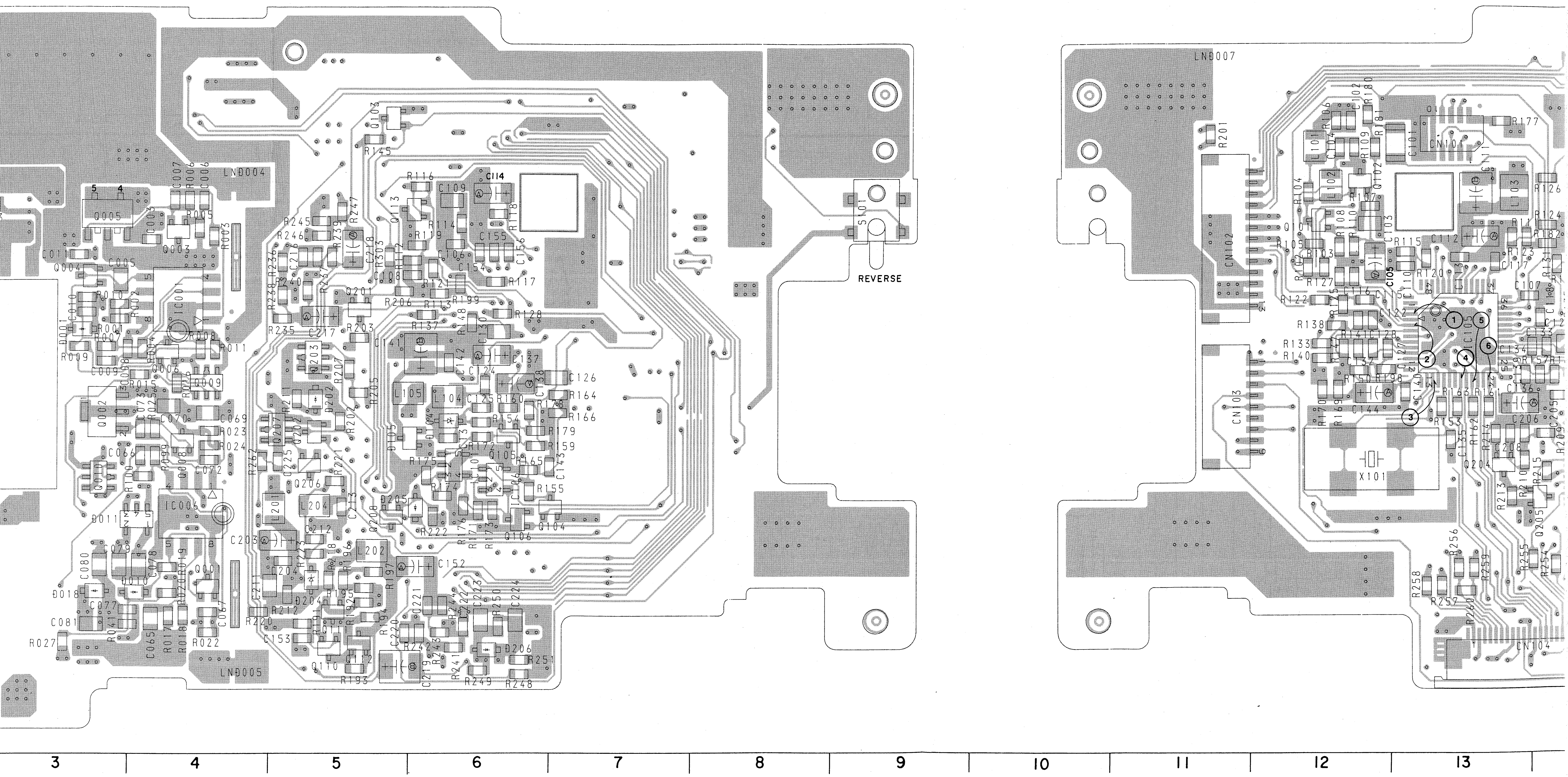

F
E
D
C
B
A
09
1
2
3
4
5
6
TALLY
D101
LND004
LND005
LND006
Q005
Q003
Q004
Q002
Q001
Q010
Q009
Q006
Q007
Q201
Q202
Q206
Q208
Q205
Q105
Q106
Q110
Q113
IC006
IC001
C109
C114
C155
C125
C141
C142
C124
C152
C153
C203
C204
C217
C065
C067
C069
C070
C072
C077
C080
C081
L105
L104
L201
L202
L204
D018
D011
D003
D205
D206
R014
R013
R027
R022
R116
R119
R117
R137
R145
R193
R206
R235
R203
R245
R246
R247
R248
R249
R241
R242
R243

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor

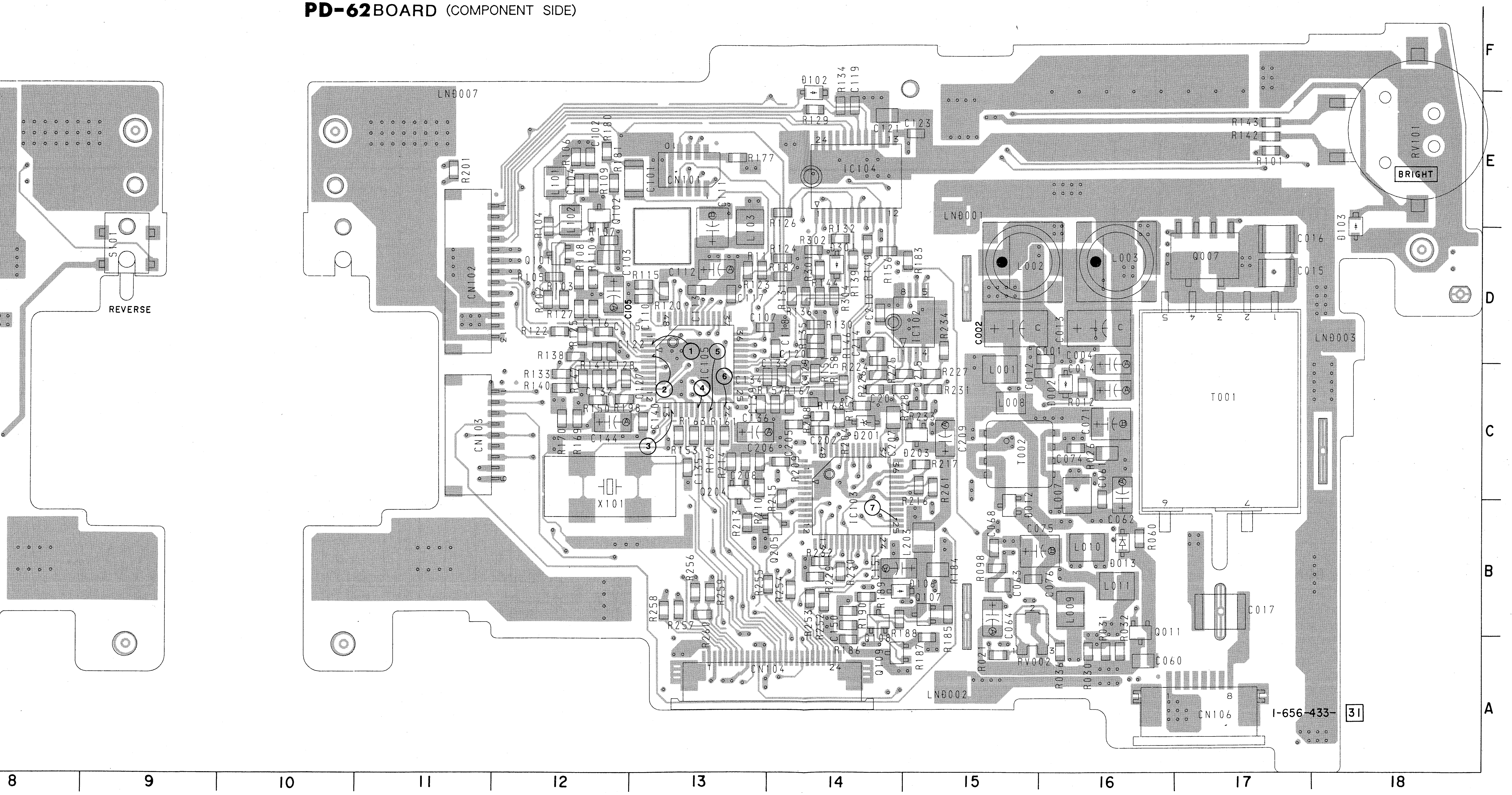

C
Q
B E
3 2 1
Q
4 5 6

There are few cases that the part isn't mounted in this model is printed on this diagram.

PD-62 BOARD (COMPONENT SIDE)


LND004
LND005
LND007
Q005
Q003
Q004
IC001
IC006
Q002
Q001
Q010
Q103
Q113
Q201
Q203
Q206
Q208
Q105
Q106
Q104
Q110
Q112
C114
S101
REVERSE
L105
L104
L201
L204
L202
R201
CN101
CN102
CN103
CN104
L101
L102
L103
Q101
Q102
IC105
X101
Q204
Q205
R177
R126
① ② ③ ④ ⑤ ⑥
3
4
5
6
7
8
9
10
11
12
13

PD-62 BOARD (COMPONENT SIDE)



LND007
LND001
LND002
LND003
S101
REVERSE
R201
CN102
CN103
CN101
CN104
CN106
X101
IC102
IC103
IC104
IC105
D102
D103
D201
D203
D013
R134
C119
R129
C121
C123
R177
R143
R142
R101
RV101
BRIGHT
L101
L102
L103
L001
L002
L003
L007
L008
L009
L010
L011
L203
Q101
Q102
Q007
Q011
Q107
Q108
Q109
Q204
Q205
C101
C102
C103
C104
C105
C110
C111
C112
C113
C115
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C128
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C134
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C144
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C202
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C209
C210
C215
C002
C004
C012
C013
C014
C015
C016
C017
C060
C061
C062
C063
C064
C068
C071
C074
C075
C076
T001
T002
RV002
R104
R105
R106
R107
R108
R109
R110
R115
R120
R122
R123
R124
R126
R127
R130
R131
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R253
R254
R255
R256
R257
R258
R259
R260
R261
R301
R302
R304
D301
D002
D012
R012
R021
R026
R030
R031
R032
R036
R060
R098
1
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4
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7
1-656-433- 31
A
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C
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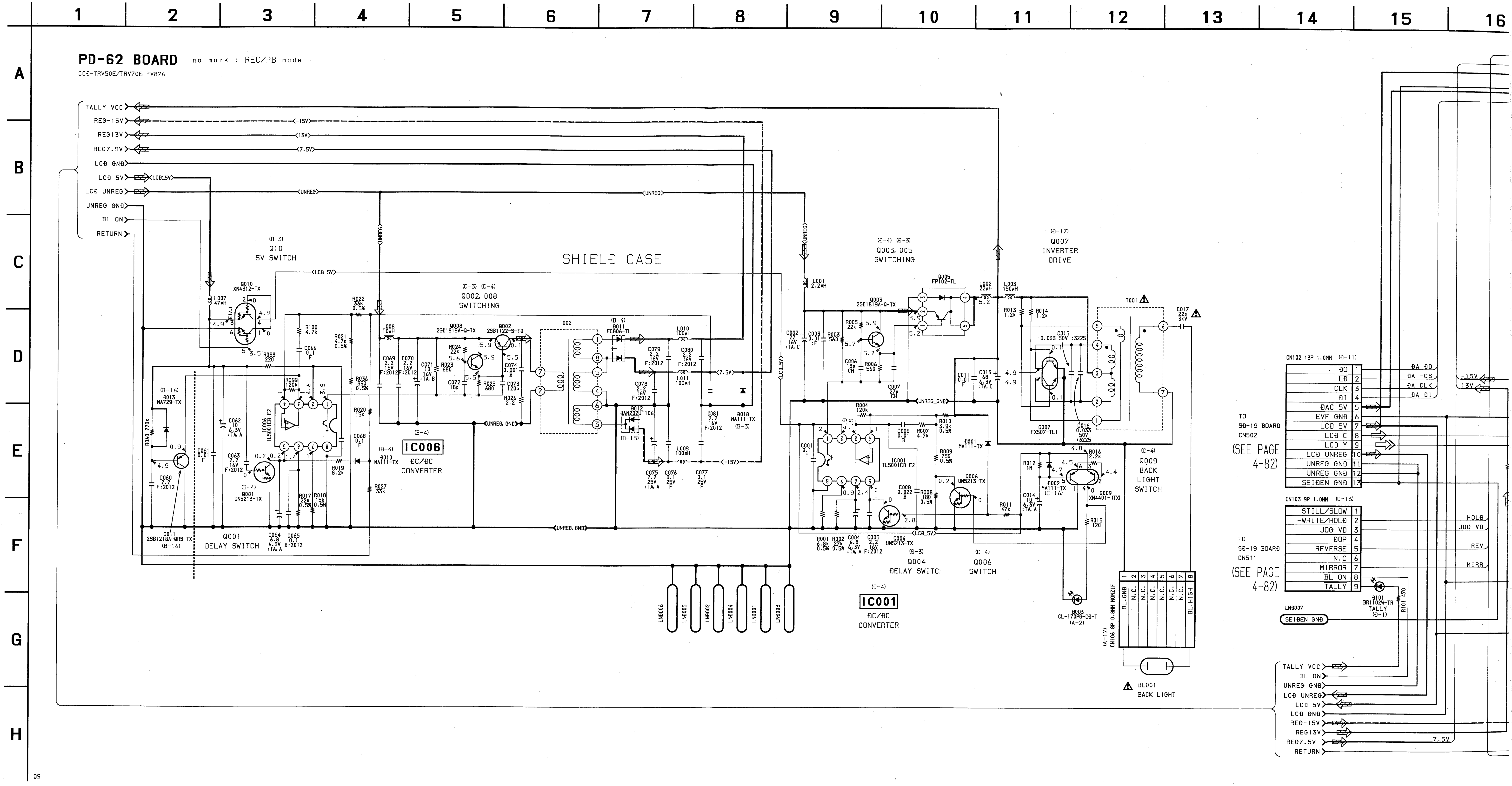
PD-62 (4" LCD DRIVE) SCHEMATIC DIAGRAM

— Ref. No. PD-62 BOARD: 7000 series —



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A
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C
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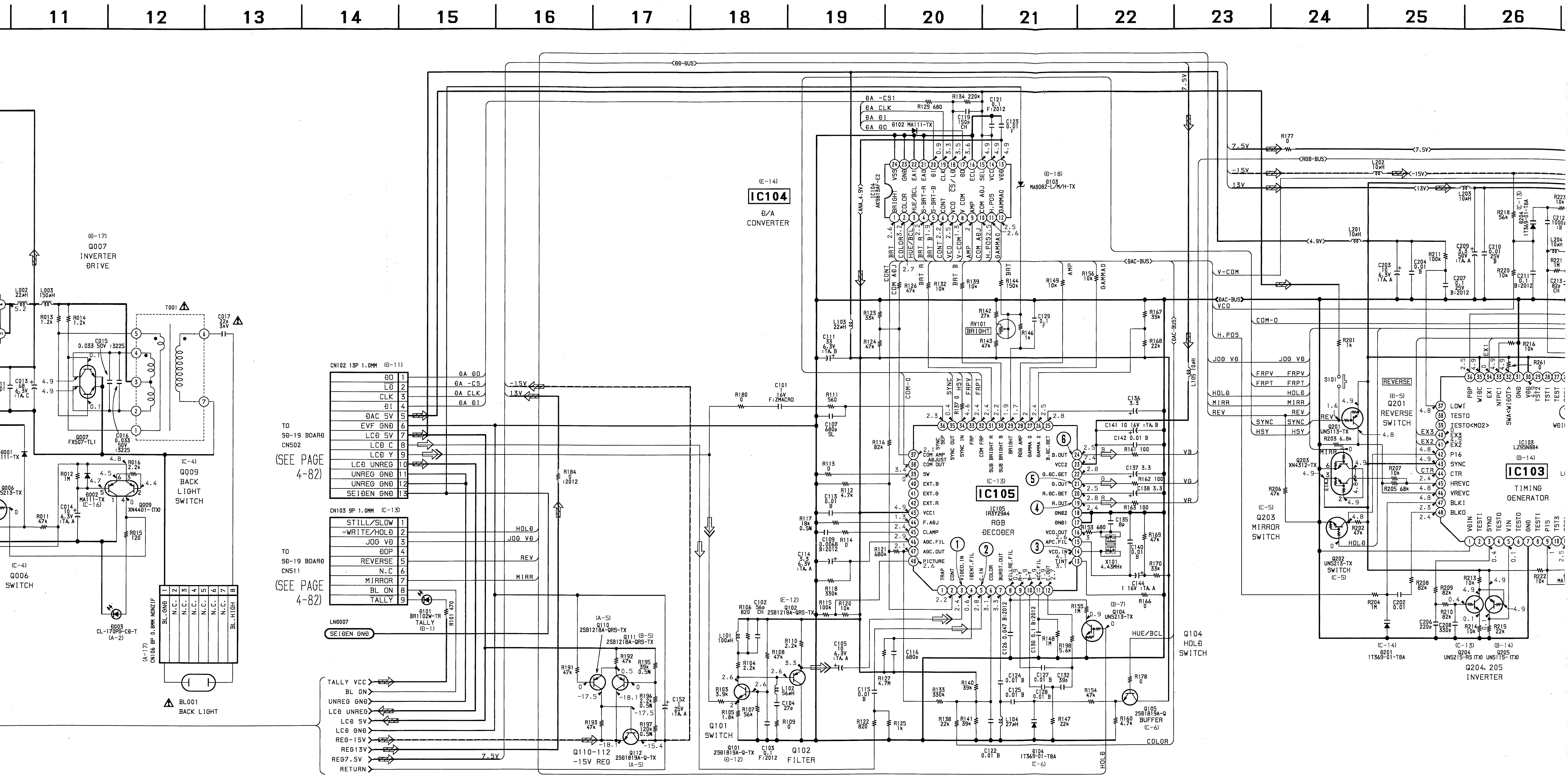
E
F
G
H
PD-62 BOARD
no mark : REC/PB mode
CCD-TRV50E/TRV70E, FV876
TALLY VCC
REG-15V
REG13V
REG7.5V
LCD GND
LCD 5V
LCD UNREG
UNREG GND
BL ON
RETURN
SHIELD CASE
(B-3) Q10 5V SWITCH
Q010 XN4312-TX
(C-3) (C-4) Q002, 008 SWITCHING
Q008 2SD1819A-Q-TX
Q002 2SB1122-S-TD
T002
D011 FC806-TL
D012 DAN202UT106
D018 MA111-TX
IC006 TL5001CD-E2
(B-4) IC006 DC/DC CONVERTER
(B-4) D010 MA111-TX
(B-16) D013 MA729-TX
Q011 2SB1218A-QRS-TX (B-16)
Q001 DELAY SWITCH
(B-4) Q001 UN5213-TX
LN8006
LN8005
LN8002
LN8004
LN8001
LN8003
(D-4) (D-3) Q003, 005 SWITCHING
Q003 2SD1819A-Q-TX
Q005 FP102-TL
(D-17) Q007 INVERTER DRIVE
Q007 FX507-TL1
T001
IC001 TL5001CD-E2
(D-4) IC001 DC/DC CONVERTER
D001 MA111-TX
(C-4) Q009 BACK LIGHT SWITCH
Q009 XN4401-(TX)
Q002 MA111-TX (C-16)
Q004 UN5213-TX
Q006 UN5213-TX
(D-3) Q004 DELAY SWITCH
(C-4) Q006 SWITCH
D003 CL-170PG-CD-T (A-2)
CN106 8P 0.8MM NONZIF (A-17)
BL.GND
N.C.
BL.HIGH
BL001 BACK LIGHT
CN102 13P 1.0MM (D-11)
DD 1
LD 2
CLK 3
DI 4
DAC 5V 5
EVF GND 6
LCD 5V 7
LCD C 8
LCD Y 9
LCD UNREG 10
UNREG GND 11
UNREG GND 12
SEIDEN GND 13
TO SD-19 BOARD CN502 (SEE PAGE 4-82)
CN103 9P 1.0MM (C-13)
STILL/SLOW 1
-WRITE/HOLD 2
JOG VD 3
DOP 4
REVERSE 5
N.C 6
MIRROR 7
BL ON 8
TALLY 9
TO SD-19 BOARD CN511 (SEE PAGE 4-82)
D101 BR1102W-TR TALLY (D-1)
R101 470
LN8007
SEIDEN GND
DA DO
DA -CS
DA CLK
DA DI
-15V
13V
HOLD
JOG VD
REV
MIRR
7.5V


11
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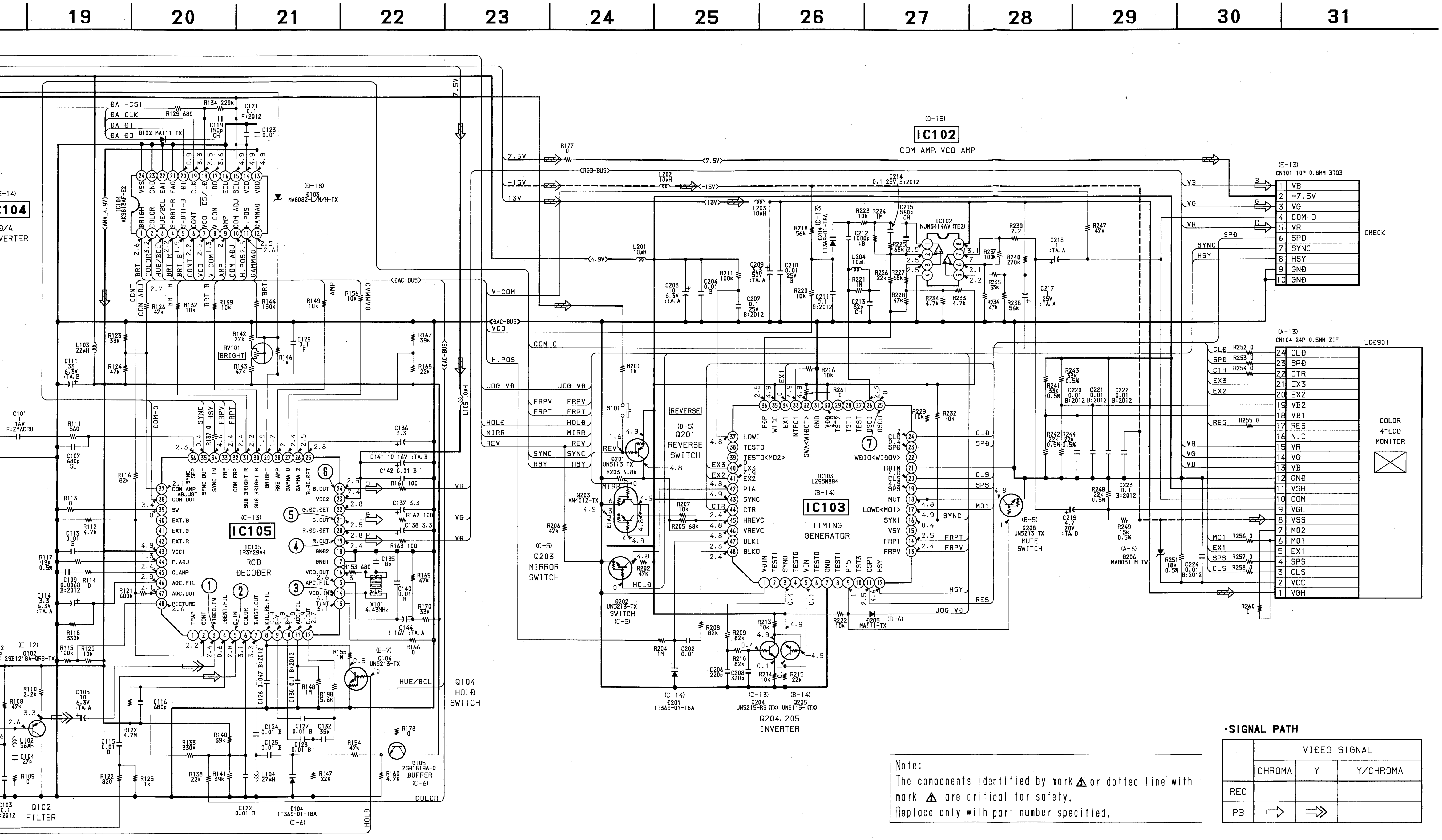
26
Q007 INVERTER DRIVE (D-17)
T001
Q009 BACK LIGHT SWITCH (C-4)
Q006 SWITCH (C-4)
D003 CL-170PG-CD-T (A-2)
BL001 BACK LIGHT
CN106 8P 0.8MM NONZIF (A-17)
BL.GND
N.C.
BL.HIGH
CN102 13P 1.0MM (D-11)
ĐD
LĐ
CLK
ĐI
ĐAC 5V
EVF GNĐ
LCĐ 5V
LCĐ C
LCĐ Y
LCĐ UNREG
UNREG GNĐ
SEIĐEN GNĐ
TO SD-19 BOARD CN502 (SEE PAGE 4-82)
CN103 9P 1.0MM (C-13)
STILL/SLOW
-WRITE/HOLĐ
JOG VĐ
ĐOP
REVERSE
N.C
MIRROR
BL ON
TALLY
TO SD-19 BOARD CN511 (SEE PAGE 4-82)
LND007
SEIĐEN GNĐ
D101 BR1102W-TR TALLY (D-1)
TALLY VCC
BL ON
UNREG GNĐ
LCĐ UNREG
LCĐ 5V
LCĐ GNĐ
REG-15V
REG13V
REG7.5V
RETURN
Q110-112 -15V REG
Q110 2SB1218A-QRS-TX
Q111 2SB1218A-QRS-TX
Q112 2SD1619A-Q-TX
<DD-BUS>
IC104 Đ/A CONVERTER (E-14)
IC104 AK9813AF-E2
D103 MA8082-L/M/H-TX (D-18)
D102 MA111-TX
ĐA -CS1
ĐA CLK
ĐA ĐI
ĐA ĐD
RV101 BRIGHT
Q101 SWITCH
Q101 2SD1619A-Q-TX (D-12)
Q102 FILTER
Q102 2SB1218A-QRS-TX (E-12)
IC105 RGB ĐECOĐER (C-13)
IC105 IR3Y29A4
X101 4.43MHz
Q104 HOLĐ SWITCH
Q104 UN5213-TX (B-7)
Q105 2SD1619A-Q BUFFER (C-6)
D104 1T369-01-T8A (C-6)
HUE/BCL
COLOR
HOLĐ
<DAC-BUS>
<RGB-BUS>
7.5V
-15V
13V
V-COM
VCO
H.POS
COM-O
JOG VĐ
FRPV
FRPT
HOLĐ
MIRR
REV
SYNC
HSY
VB
VG
VR
S101
Q201 REVERSE SWITCH (D-5)
Q201 UN5113-TX
Q203 MIRROR SWITCH (C-5)
Q203 XN4312-TX
Q202 UN5213-TX SWITCH (C-5)
Q201 1T369-01-T8A (C-14)
Q204 UN5215-RS (TX) Q205 UN5115-(TX)
Q204, 205 INVERTER
IC103 LZ95N884 (B-14)
IC103 TIMING GENERATOR


19
20
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24
25
26
27
28
29
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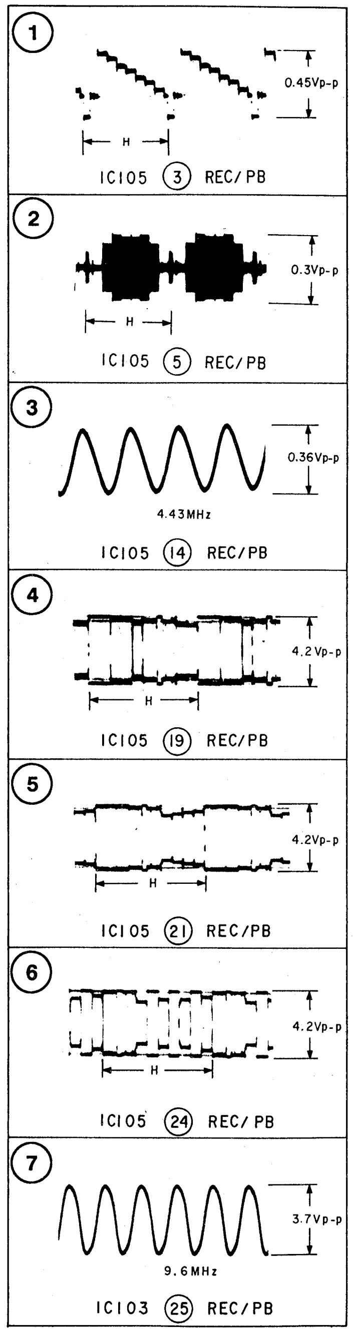
31
IC102
COM AMP, VCO AMP
IC103
TIMING GENERATOR
IC105
IR3Y29A4
RGB DECODER
IC104
D/A
CONVERTER
(E-13)
CN101 10P 0.8MM BTOB
CHECK
(A-13)
CN104 24P 0.5MM ZIF
LCD901
COLOR 4"LCD MONITOR
Q201
REVERSE SWITCH
Q203
MIRROR SWITCH
Q202
SWITCH
Q204, 205
INVERTER
Q208
MUTE SWITCH
Q104
HOLD SWITCH
Q105
BUFFER
Q102
FILTER
X101
4.43MHz
RV101
BRIGHT
7.5V
-15V
13V
RGB-BUS
DAC-BUS
VB
VG
VR
SYNC
HSY
COM-O
V-COM
VCO
H.POS
JOG VD
HOLD
MIRR
REV
COLOR
HUE/BCL

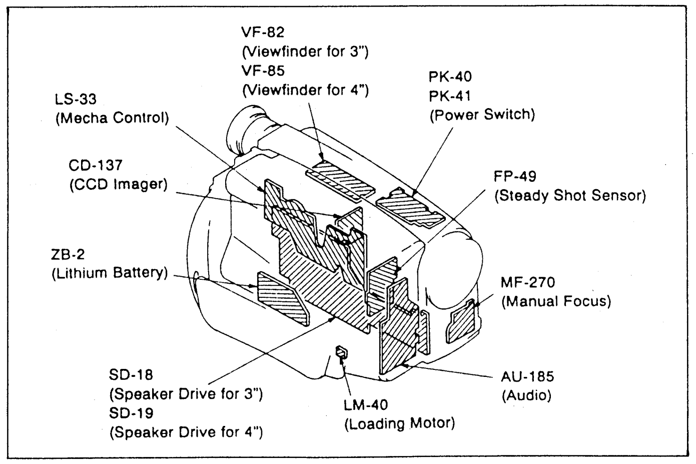
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

·SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			
PB	⇨	⇛	

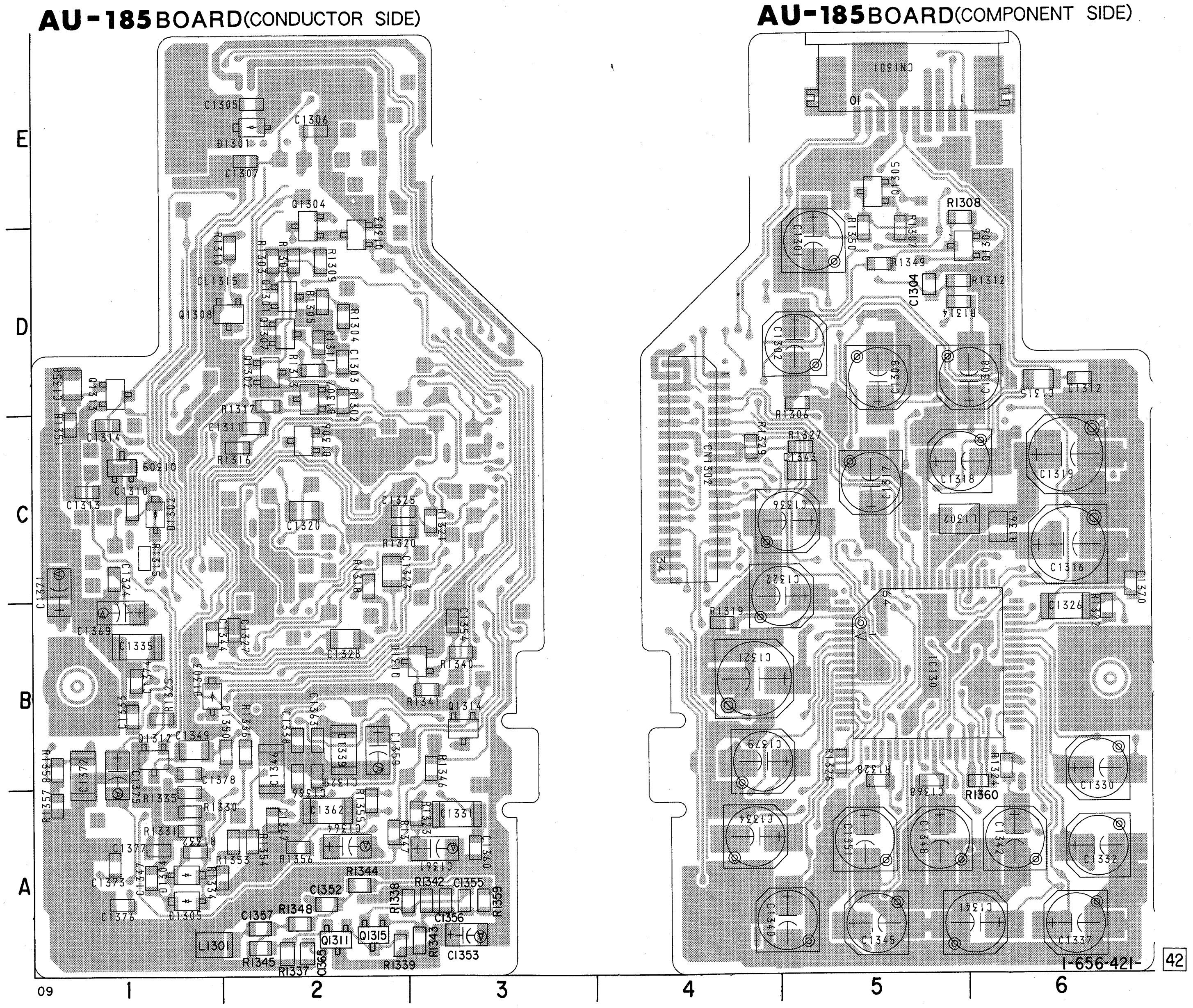
PD-62BOARD




VF-82
(Viewfinder for 3")
VF-85
(Viewfinder for 4")
PK-40
PK-41
(Power Switch)
LS-33
(Mecha Control)
CD-137
(CCD Imager)
FP-49
(Steady Shot Sensor)
ZB-2
(Lithium Battery)
MF-270
(Manual Focus)
SD-18
(Speaker Drive for 3")
SD-19
(Speaker Drive for 4")
LM-40
(Loading Motor)
AU-185
(Audio)

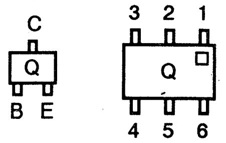
AU-185 (AUDIO) PRINTED WIRING BOARD

There are few cases that the part isn't mounted in this model is printed on this diagram.


AU-185 BOARD(CONDUCTOR SIDE)
AU-185 BOARD(COMPONENT SIDE)
E
D
C
B
A
1
2
3
4
5
6
09
1-656-421-
42
CN1301
CN1302
IC130
L1301
Q1304
Q1308
Q1311
Q1315
C1305
C1306
C1307
D1301
R1308
R1360
R1344
R1342
C1355
C1352
C1357
R1348
R1345
R1337
R1339
C1353

- When AU-185 Board is replaced, it should be replaced with MA-237 Board and Flexible flat cable FFC-199 10 Pin (1-775-961-11) together.

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor


C
Q
B E
3 2 1
Q
4 5 6

AU-185 BOARD SUPPLEMENT-2	
C1306	E-2
C1307	E-2
C1322	C-5
C1323	C-2
C1326	B-6
C1327	B-2
C1328	B-2
C1329	B-2
C1330	B-6
C1332	A-6
C1335	B-1
C1337	A-6
C1345	A-5
C1346	B-2
C1347	A-1
C1351	A-5
C1373	A-1
C1379	B-4
IC130	B-5
L1301	A-1
L1302	C-5
Q1314	B-3
R1306	D-5
R1314	D-5
R1318	C-2
R1319	B-4
R1320	C-2
R1322	B-6
R1323	A-3
R1325	B-1
R1326	B-5
R1328	B-5
R1334	A-1
R1336	B-2
R1358	B-1
R1360	B-5
R1361	C-6

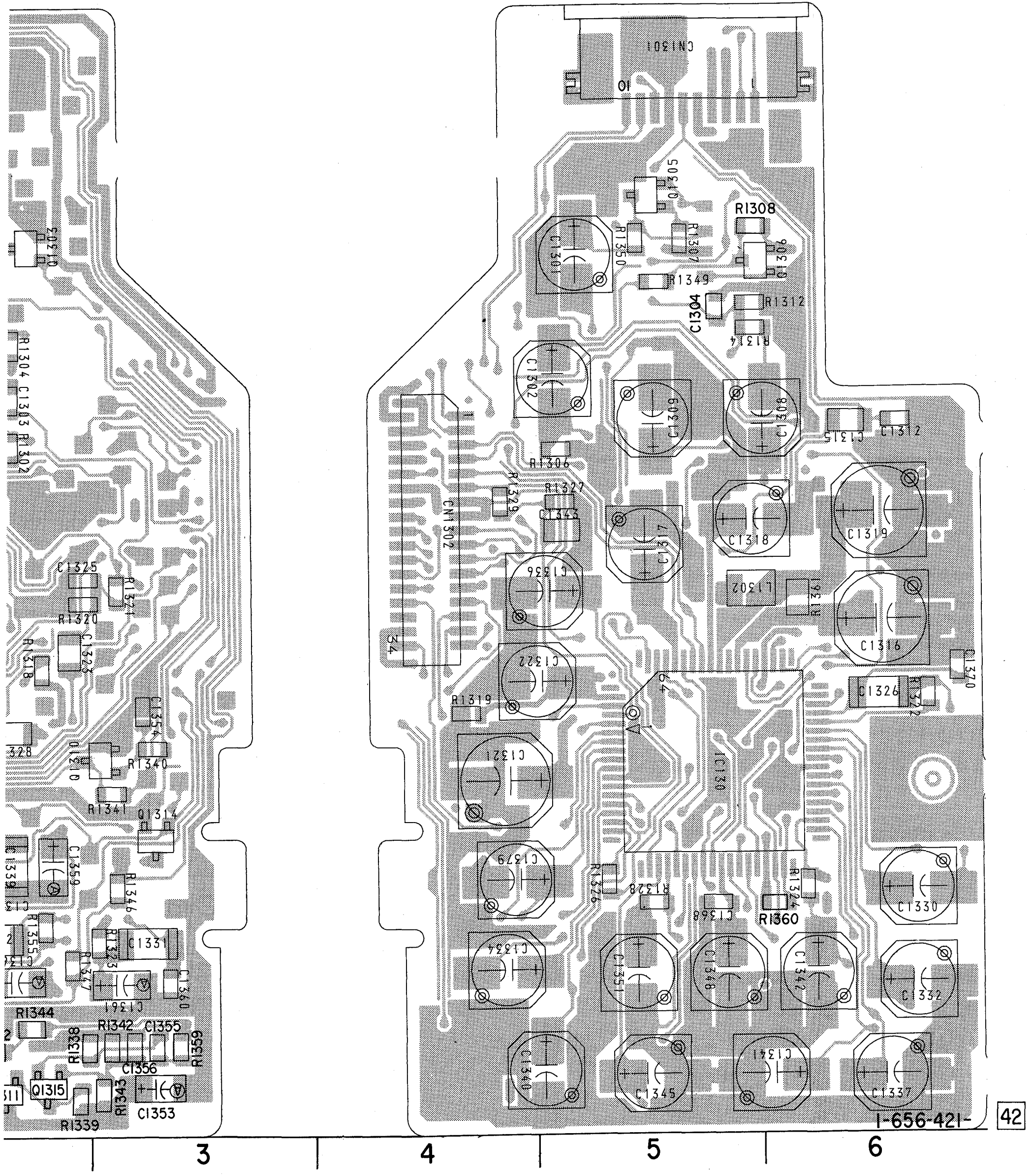
AU-185 BOARD SUPPLEMENT-1	
C1301	D-5
C1302	D-5
C1305	E-2
C1306	E-2
C1307	E-2
C1308	D-6
C1309	D-5
C1313	C-1
C1314	C-1
C1315	D-6
C1316	C-6
C1317	C-5
C1318	C-5
C1319	C-6
C1320	C-2
C1321	B-4
C1322	C-5
C1323	C-2
C1324	C-1
C1326	B-6
C1328	B-2
C1329	B-2
C1330	B-6
C1331	A-3
C1332	A-6
C1333	B-1
C1334	A-4
C1335	B-1
C1336	C-5
C1337	A-6
C1338	B-2
C1339	B-2
C1340	A-5
C1341	A-6
C1342	A-6
C1344	B-1
C1345	A-5
C1346	B-2
C1347	A-1
C1348	A-5
C1350	B-2
C1351	A-5
C1352	A-2
C1358	D-1
C1373	A-1
C1379	B-4
CN1301	E-5
CN1302	C-4
D1303	B-1
D1306	C-2
IC130	B-5
L1302	C-5
Q1301	D-2
Q1302	D-2
Q1303	D-2
Q1304	E-2
Q1305	E-5
Q1306	D-6
Q1307	D-2
Q1308	D-2
Q1309	C-1
Q1313	D-1
Q1314	B-3
R1301	D-2
R1302	D-2
R1303	D-2
R1304	D-2
R1306	D-5
R1307	D-5
R1308	E-5
R1309	D-2
R1310	D-2
R1313	D-2
R1314	D-5
R1316	C-2
R1317	D-2
R1318	C-2
R1319	B-4
R1320	C-2
R1321	C-3
R1322	B-6
R1323	A-3
R1324	B-6
R1325	B-1
R1326	B-5
R1328	B-5
R1329	C-4
R1331	A-1
R1332	A-1
R1334	A-1
R1336	B-2
R1341	B-3
R1344	A-2
R1346	B-3
R1347	A-2
R1348	A-2
R1349	D-5
R1350	D-5
R1351	C-1
R1355	A-1
R1358	B-1
R1361	C-6

BOARD

There are few cases that the part isn't mounted in this model is printed on this diagram.

ƆR SIDE)

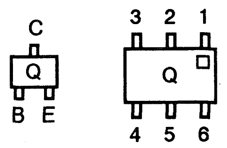
AU-185 BOARD(COMPONENT SIDE)



CN1301
Q1305
R1308
C1301
R1350
C1307
R1306
R1349
C1304
R1312
R1314
C1302
C1309
C1308
C1313
C1312
R1306
R1327
R1329
CN1302
C1353
C1317
C1318
C1319
C1315
R1302
R1361
C1316
C1322
C1326
R1319
C1321
IC130
C1320
C1379
R1328
R1326
C1368
R1360
R1324
C1330
C1334
C1351
C1346
C1342
C1332
C1340
C1345
C1341
C1337
1-656-421-
42
C1325
R1320
R1340
R1341
Q1314
R1344
R1342
C1355
C1356
Q1315
R1339
R1338
R1343
C1353
R1359
C1331
3
4
5
6

it should be replaced with cable FFC-199 10 Pin

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor



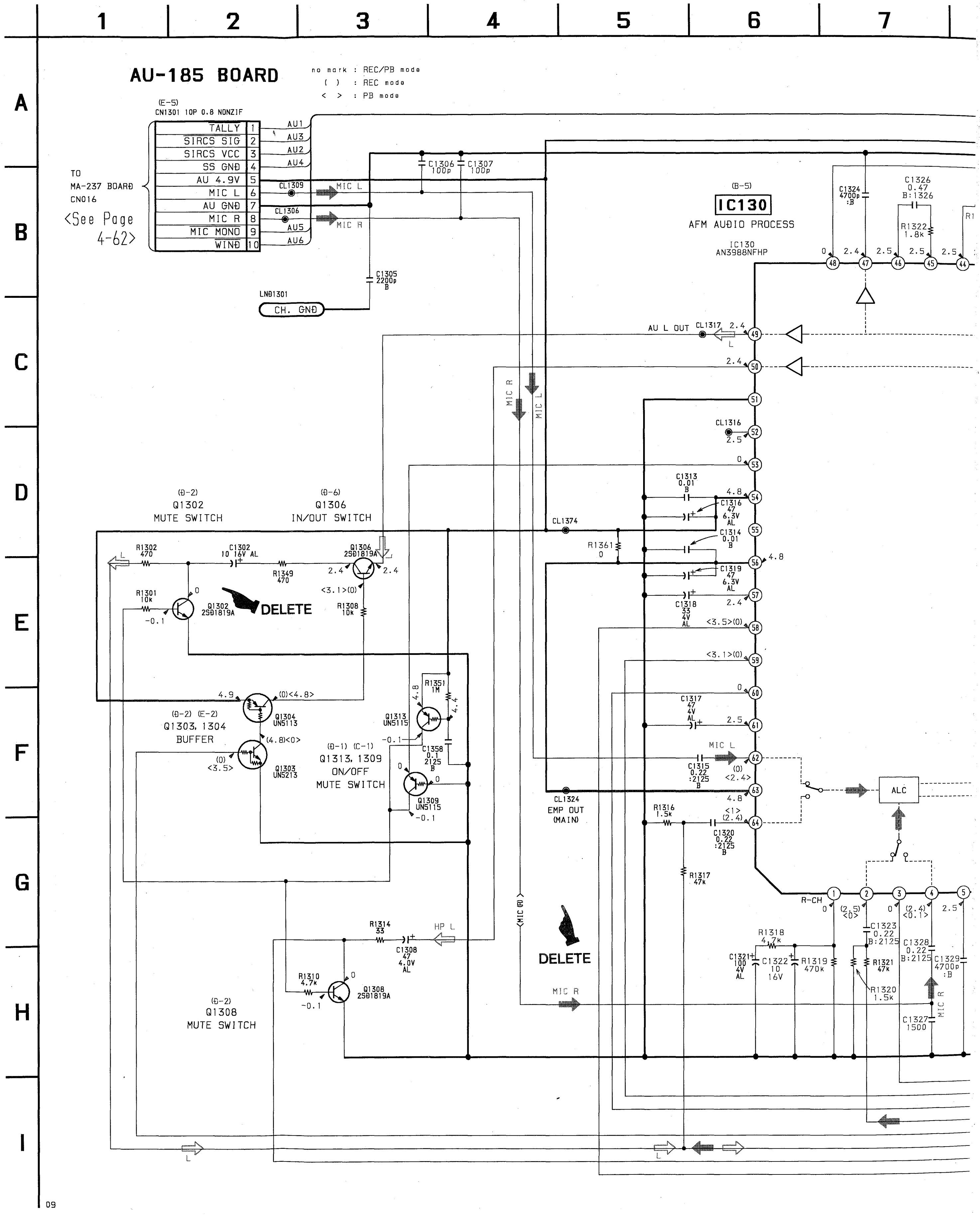
C
Q
B E
3 2 1
Q
4 5 6

AU-185 BOARD SUPPLEMENT-2	
C1306	E-2
C1307	E-2
C1322	C-5
C1323	C-2
C1326	B-6
C1327	B-2
C1328	B-2
C1329	B-2
C1330	B-6
C1332	A-6
C1335	B-1
C1337	A-6
C1345	A-5
C1346	B-2
C1347	A-1
C1351	A-5
C1373	A-1
C1379	B-4
IC130	B-5
L1301	A-1
L1302	C-5
Q1314	B-3
R1306	D-5
R1314	D-5
R1318	C-2
R1319	B-4
R1320	C-2
R1322	B-6
R1323	A-3
R1325	B-1
R1326	B-5
R1328	B-5
R1334	A-1
R1336	B-2
R1358	B-1
R1360	B-5
R1361	C-6

AU-185 BOARD SUPPLEMENT-1	
C1301	D-5
C1302	D-5
C1305	E-2
C1306	E-2
C1307	E-2
C1308	D-6
C1309	D-5
C1313	C-1
C1314	C-1
C1315	D-6
C1316	C-6
C1317	C-5
C1318	C-5
C1319	C-6
C1320	C-2
C1321	B-4
C1322	C-5
C1323	C-2
C1324	C-1
C1326	B-6
C1328	B-2
C1329	B-2
C1330	B-6
C1331	A-3
C1332	A-6
C1333	B-1
C1334	A-4
C1335	B-1
C1336	C-5
C1337	A-6
C1338	B-2
C1339	B-2
C1340	A-5
C1341	A-6
C1342	A-6
C1344	B-1
C1345	A-5
C1346	B-2
C1347	A-1
C1348	A-5
C1350	B-2
C1351	A-5
C1352	A-2
C1358	D-1
C1373	A-1
C1379	B-4
CN1301	E-5
CN1302	C-4
D1303	B-1
D1306	C-2
IC130	B-5
L1302	C-5
Q1301	D-2
Q1302	D-2
Q1303	D-2
Q1304	E-2
Q1305	E-5
Q1306	D-6
Q1307	D-2
Q1308	D-2
Q1309	C-1
Q1313	D-1
Q1314	B-3
R1301	D-2
R1302	D-2
R1303	D-2
R1304	D-2
R1306	D-5
R1307	D-5
R1308	E-5
R1309	D-2
R1310	D-2
R1313	D-2
R1314	D-5
R1316	C-2
R1317	D-2
R1318	C-2
R1319	B-4
R1320	C-2
R1321	C-3
R1322	B-6
R1323	A-3
R1324	B-6
R1325	B-1
R1326	B-5
R1328	B-5
R1329	C-4
R1331	A-1
R1332	A-1
R1334	A-1
R1336	B-2
R1341	B-3
R1344	A-2
R1346	B-3
R1347	A-2
R1348	A-2
R1349	D-5
R1350	D-5
R1351	C-1
R1355	A-1
R1358	B-1
R1361	C-6

AU-185 (AUDIO) SCHEMATIC DIAGRAM

The modified parts are indicated by the color red.



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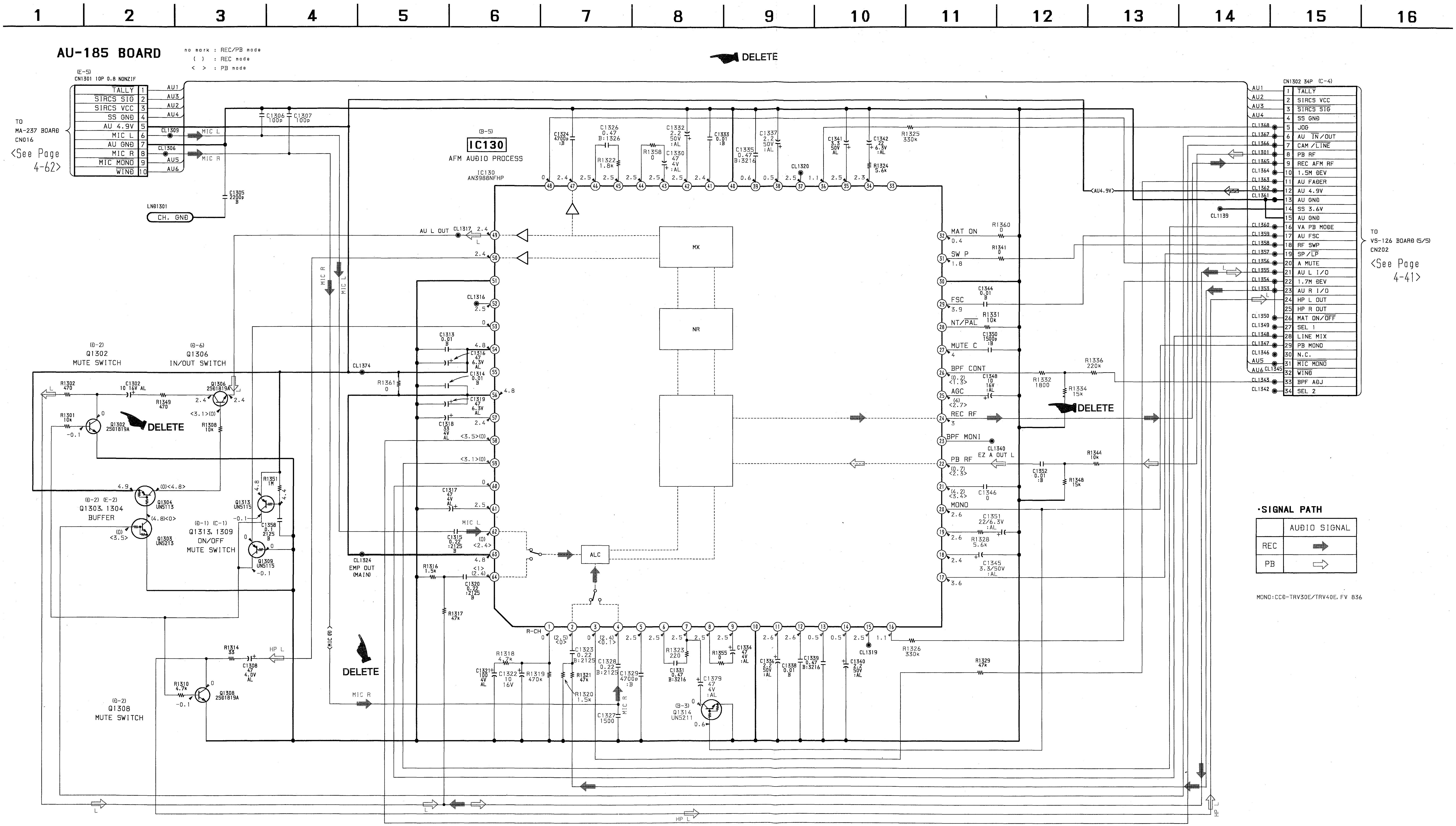
7
A
B
C
D
E
F
G
H
I
AU-185 BOARD
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
(E-5)
CN1301 10P 0.8 NONZIF
TALLY
SIRCS SIG
SIRCS VCC
SS GND
AU 4.9V
MIC L
AU GND
MIC R
MIC MONO
WIND
TO MA-237 BOARD CN016
<See Page 4-62>
AU1
AU3
AU2
AU4
CL1309
CL1306
AU5
AU6
MIC L
MIC R
C1306 100p
C1307 100p
C1305 2200p B
LND1301
CH. GND
(B-5)
IC130
AFM AUDIO PROCESS
IC130 AN3988NFHP
C1324 4700p :B
C1326 0.47 B:1326
R1322 1.8k
AU L OUT
CL1317
CL1316
C1313 0.01 B
C1316 47 6.3V AL
C1314 0.01 B
C1319 47 6.3V AL
C1318 33 4V AL
C1317 47 4V AL
C1315 0.22 :2125 B
C1320 0.22 :2125 B
R1316 1.5k
R1317 47k
CL1374
R1361 0
CL1324 EMP OUT (MAIN)
ALC
R-CH
(B-2) Q1302 MUTE SWITCH
(B-6) Q1306 IN/OUT SWITCH
R1302 470
C1302 10 16V AL
R1349 470
Q1306 2SB1819A
R1301 10k
Q1302 2SB1819A
DELETE
R1308 10k
(B-2) (E-2) Q1303, 1304 BUFFER
Q1304 UN5113
Q1303 UN5213
Q1313 UN5115
R1351 1M
C1358 0.1 2125 B
(B-1) (C-1) Q1313, 1309 ON/OFF MUTE SWITCH
Q1309 UN5115
R1314 33
HP L
C1308 47 4.0V AL
R1310 4.7k
Q1308 2SB1819A
(G-2) Q1308 MUTE SWITCH
(MIC ON)
DELETE
MIC R
R1318 4.7k
C1321 100 4V AL
C1322 10 16V
R1319 470k
R1321 47k
R1320 1.5k
C1323 0.22 B:2125
C1328 0.22 B:2125
C1329 4700p :B
C1327 1500
09

5 (AUDIO) SCHEMATIC DIAGRAM

odified parts are indicated by the color red.



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2
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AU-185 BOARD
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
DELETE
(E-5)
CN1301 10P 0.8 NONZIF
TALLY
SIRCS SIG
SIRCS VCC
SS GND
AU 4.9V
MIC L
AU GND
MIC R
MIC MONO
WIND
TO
MA-237 BOARD
CN016
<See Page
4-62>
AU1
AU3
AU2
AU4
AU5
AU6
CL1309
CL1306
MIC L
MIC R
C1306
100p
C1307
100p
C1305
2200p
B
LND1301
CH. GND
(B-5)
IC130
AFM AUDIO PROCESS
IC130
AN3986NFHP
C1324
4700p
:B
C1326
0.47
B:1326
R1322
1.8k
C1332
2.2
50V
:AL
R1358
0
C1330
47
4V
:AL
C1333
0.01
:B
C1335
0.47
B:3216
C1337
2.2
50V
:AL
CL1320
C1341
3.3
50V
AL
C1342
22
6.3V
:AL
R1324
5.6k
R1325
330k
AU L OUT
CL1317
MX
NR
ALC
CL1374
R1361
0
CL1316
C1313
0.01
B
C1316
47
6.3V
AL
C1314
0.01
B
C1319
47
6.3V
AL
C1318
33
4V
AL
C1317
47
4V
AL
MIC L
C1315
0.22
:2125
B
C1320
0.22
:2125
B
R1316
1.5k
R1317
47k
CL1324
EMP OUT
(MAIN)
MIC R
MIC L
MIC R
(B-2)
Q1302
MUTE SWITCH
(B-6)
Q1306
IN/OUT SWITCH
R1302
470
C1302
10 16V AL
R1349
470
Q1306
2SD1819A
R1301
10k
Q1302
2SD1819A
R1308
10k
(B-2) (E-2)
Q1303, 1304
BUFFER
Q1304
UN5113
Q1303
UN5213
(B-1) (C-1)
Q1313, 1309
ON/OFF
MUTE SWITCH
R1351
1M
Q1313
UN5115
C1358
0.1
2125
B
Q1309
UN5115
R1314
33
HP L
C1308
47
4.0V
AL
R1310
4.7k
Q1308
2SD1819A
(B-2)
Q1308
MUTE SWITCH
(MIC R)
DELETE
R-CH
R1318
4.7k
C1321
100
4V
AL
C1322
10
16V
R1319
470k
C1323
0.22
B:2125
R1321
47k
R1320
1.5k
C1328
0.22
B:2125
C1329
4700p
:B
C1327
1500
MIC R
R1323
220
C1331
0.47
B:3216
R1355
0
C1334
47
4V
:AL
C1379
47
4V
:AL
(B-3)
Q1314
UN5211
C1336
2.2
50V
:AL
C1338
0.01
B
C1339
0.47
B:3216
C1340
2.2
50V
:AL
CL1319
R1326
330k
R1329
47k
MAT ON
R1360
0
SW P
R1341
0
FSC
C1344
0.01
B
NT/PAL
R1331
10k
MUTE C
C1350
1500p
:B
BPF CONT
C1348
10
16V
:AL
AGC
REC RF
BPF MONI
CL1340
EZ A OUT L
PB RF
C1346
0
MONO
C1351
22/6.3V
:AL
R1328
5.6k
C1345
3.3/50V
:AL
R1336
220k
R1332
1800
R1334
15k
DELETE
R1344
10k
C1352
0.01
:B
R1348
15k
<AU4.9V>
CL1139
CN1302 34P (C-4)
TALLY
SIRCS VCC
SIRCS SIG
SS GND
JOG
AU IN/OUT
CAM /LINE
PB RF
REC AFM RF
1.5M DEV
AU FADER
AU 4.9V
AU GND
SS 3.6V
AU GND
VA PB MODE
AU FSC
RF SWP
SP/LP
A MUTE
AU L I/O
1.7M DEV
AU R I/O
HP L OUT
HP R OUT
MAT ON/OFF
SEL 1
LINE MIX
PB MONO
N.C.
MIC MONO
WIND
BPF ADJ
SEL 2
TO
VS-126 BOARD (5/5)
CN202
<See Page
4-41>
HP L
•SIGNAL PATH
AUDIO SIGNAL
REC
PB
MONO:CCD-TRV30E/TRV40E, FV 836

- **PARTS CHANGE (AU-185 BOARD)**

Former				New			
Ref.No	Part No	Description	Remark	Ref.No	Part No	Description	Remark
C1306	—			C1306	1-162-953-11	CERAMIC CHIP 100PF 5%	50V
C1307	—			C1307	1-162-953-11	CERAMIC CHIP 100PF 5%	50V
C1322	1-124-778-00	ELECT CHIP 22uF 20%	6.3V	C1322	1-124-779-00	ELECT CHIP 10uF 20%	16V
C1323	—			C1323	1-164-489-11	CERAMIC CHIP 0.22uF 10%	16V
C1326	—			C1326	1-165-320-11	CERAMIC CHIP 0.47uF 10%	16V
C1327	—			C1327	1-216-823-11	METAL CHIP 1.5K 5%	1/16W
C1328	—			C1328	1-164-489-11	CERAMIC CHIP 0.22uF 10%	16V
C1329	—			C1329	1-162-968-11	CERAMIC CHIP 0.0047uF 10%	50V
C1330	—			C1330	1-126-208-21	ELECT CHIP 47uF	4V
C1332	—			C1332	1-126-195-21	ELECT CHIP 2.2uF	50V
C1335	—			C1335	1-165-320-11	CERAMIC CHIP 0.47uF 10%	16V
C1337	—			C1337	1-126-195-21	ELECT CHIP 2.2uF	50V
C1345	—			C1345	1-126-196-21	ELECT CHIP 3.3uF	50V
C1346	—			C1346	1-216-296-11	METAL CHIP 0	
C1347	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	C1347	—		
C1351	—			C1351	1-124-778-00	ELECT CHIP 22uF 20%	6.3V
C1373	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C1373	—		
C1379	—			C1379	1-126-208-21	ELECT CHIP 47uF	4V
IC130	8-759-338-93	IC AN3996FHP-EB		IC130	8-759-330-00	IC AN3988FHP-EB	
L1302	1-216-295-91	CONDUCTOR, CHIP (2012)		L1302	—		
Q1314	—			Q1314	8-729-015-77	TRANSISTOR UN5211	
R1306	1-216-833-11	METAL CHIP 10K 5%	1/16W	R1306	—		
R1318	1-216-837-11	METAL CHIP 22K 5%	1/16W	R1318	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R1319	1-216-857-11	METAL CHIP 1M 5%	1/16W	R1319	1-216-853-11	METAL CHIP 470K 5%	1/16W
R1320	—			R1320	1-216-823-11	METAL CHIP 1.5K 5%	1/16W
R1322	—			R1322	1-216-824-11	METAL CHIP 1.8K 5%	1/16W
R1323	1-216-829-11	METAL CHIP 4.7K 5%	1/16W	R1323	1-216-813-11	METAL CHIP 220 5%	1/16W
R1325	1-216-843-11	METAL CHIP 68K 5%	1/16W	R1325	1-216-851-11	METAL CHIP 330K 5%	1/16W
R1326	—			R1326	1-216-851-11	METAL CHIP 330K 5%	1/16W
R1328	—			R1328	1-216-830-11	METAL CHIP 5.6K 5%	1/16W
R1334	1-218-881-11	METAL CHIP 27K 0.50%	1/16W	R1334	1-218-875-11	METAL CHIP 15K 0.50%	1/16W
R1336	1-218-901-11	METAL CHIP 180K 0.50%	1/16W	R1336	1-218-903-11	METAL CHIP 220K 0.50%	1/16W
R1358	—			R1358	1-216-864-11	METAL CHIP 0 5%	1/16W
R1360	—			R1360	1-216-864-11	METAL CHIP 0 5%	1/16W
R1361	—			R1361	1-216-295-91	CONDUCTOR, CHIP (2012)	

SECTION 5
REPAIR PARTS LIST

5-1. EXPLODED VIEWS

5-1-6. LCD SCREEN BLOCK ASSEMBLY (TRV50E/TRV70E)

TYPE I				TYPE II (addition)			
Ref.No	Part No	Description	Remark	Ref.No	Part No	Description	Remark
254	A-7066-463-A	PD-62P BOARD, COMPLETE (TRV50E/TRV70E)		254	A-7066-762-A	PD-62P BOARD, COMPLETE (TRV50E/TRV70E)	
⚠BL001	1-517-411-11	TUBE, FLUORESCENT, COLD CATHODE (TRV50E/TRV70E)		⚠BL001	1-517-411-21	TUBE, FLUORESCENT, COLD CATHODE (TRV50E/TRV70E)	
LCD901	1-810-862-21	INDICATOR MODULE, LIQUID CRYSTAL (TRV50E/TRV70E)		LCD901	1-801-150-21	DISPLAY MODULE, LIQUID CRYSTAL (TRV50E/TRV70E)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-2. ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA..., uPB...: μPB..., uPC...: μPC..., uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

Ref. No.	Part No.	Description			Remark
*	A-7066-762-A	PD-62 BOARD, COMPLETE (TRV50E/TRV70E)			
		**************************************			
		(Ref. No. 7,000 Series)			
		< CAPACITOR >			
C001	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C002	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C003	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C004	1-135-211-11	TANTAL. CHIP	6.8uF	20%	6.3V
C005	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C006	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C007	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C008	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C009	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C011	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C013	1-107-854-11	TANTAL. CHIP	68uF	20%	6.3V
C014	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C015	1-109-986-11	FILM CHIP	0.033uF	5%	50V
C016	1-109-986-11	FILM CHIP	0.033uF	5%	50V
⚠C017	1-107-526-11	CERAMIC CHIP	22PF	10%	3KV
C060	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C061	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C062	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C063	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C064	1-135-211-11	TANTAL. CHIP	6.8uF	20%	6.3V
C065	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C066	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C068	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C069	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C070	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C071	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C072	1-162-944-11	CERAMIC CHIP	18PF	5%	50V
C073	1-162-954-11	CERAMIC CHIP	120PF	5%	50V
C074	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C075	1-135-212-21	TANTAL. CHIP	2.2uF	20%	25V
C076	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C077	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C078	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C079	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C080	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C081	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C101	1-162-638-11	CERAMIC CHIP	1uF		16V
C102	1-162-924-11	CERAMIC CHIP	56PF	5%	50V
C103	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C104	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C105	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C107	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C109	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C111	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V
C113	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C114	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C115	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C116	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C119	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C121	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C122	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C123	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C124	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C125	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C126	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C127	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C128	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C129	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C130	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C132	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
C135	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
C136	1-104-912-11	TANTAL. CHIP	3.3uF	20%	16V
C137	1-104-912-11	TANTAL. CHIP	3.3uF	20%	16V
C138	1-104-912-11	TANTAL. CHIP	3.3uF	20%	16V
C140	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C141	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C142	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C144	1-135-333-11	TANTAL. CHIP	1uF	20%	16V
C152	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C202	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C203	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C204	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C206	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C207	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C208	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C209	1-107-687-11	TANTAL. CHIP	3.3uF	20%	20V
C210	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

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Ref.No.	Part No.	Description			Remark
C211	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C212	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C213	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C214	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C215	1-164-363-11	CERAMIC CHIP	560PF	5%	50V
C217	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C218	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C219	1-135-214-21	TANTAL. CHIP	4.7uF	20%	20V
C220	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C221	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C222	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C223	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C224	1-164-232-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
* CN101	1-573-984-11	CONNECTOR, BOARD TO BOARD 10P			
CN102	1-770-630-21	PIN, CONNECTOR 13P			
CN103	1-770-626-21	PIN, CONNECTOR 9P			
CN104	1-573-364-11	CONNECTOR, FFC/FPC 24P			
CN106	1-691-487-21	CONNECTOR, FFC/FPC 8P			
		< DIODE >			
D001	8-719-404-49	DIODE	MA111		
D002	8-719-404-49	DIODE	MA111		
D003	8-719-033-14	DIODE	CL-170PG-CD-T		
D010	8-719-404-49	DIODE	MA111		
D011	8-719-989-33	DIODE	FC806		
D012	8-719-941-86	DIODE	DAN202U		
D013	8-719-420-51	DIODE	MA729		
D018	8-719-404-49	DIODE	MA111		
D101	8-719-951-20	LED	BR1102W		
D102	8-719-404-49	DIODE	MA111		
D103	8-719-420-14	DIODE	MA8082-M		
D104	8-713-102-80	DIODE	1T369-01-T8A		
D201	8-713-102-80	DIODE	1T369-01-T8A		
D204	8-713-102-80	DIODE	1T369-01-T8A		
D205	8-719-404-49	DIODE	MA111		
D206	8-719-420-90	DIODE	MA8051-M		
		< IC >			
IC001	8-759-521-35	IC	TL5001CD-E2		
IC006	8-759-521-35	IC	TL5001CD-E2		
IC102	8-759-359-49	IC	NJM3414AV(TE2)		
IC103	8-759-371-19	IC	LZ95N884		
IC104	8-759-251-40	IC	MB88E346PFV-G-BND-ER		
IC105	8-759-374-36	IC	IR3Y29A4		
		< COIL >			
L001	1-412-027-11	INDUCTOR CHIP 2.2uH			
L002	1-424-674-11	COIL, CHOKE 22uH			

Ref.No.	Part No.	Description			Remark
L003	1-406-924-11	COIL, CHOKE 150uH			
L007	1-412-062-11	INDUCTOR CHIP 47uH			
L008	1-414-078-11	INDUCTOR 10uH			
L009	1-412-032-11	INDUCTOR CHIP 100uH			
L010	1-412-032-11	INDUCTOR CHIP 100uH			
L011	1-412-032-11	INDUCTOR CHIP 100uH			
L101	1-412-963-11	INDUCTOR 100uH			
L102	1-412-960-21	INDUCTOR 56uH			
L103	1-412-030-11	INDUCTOR CHIP 22uH			
L104	1-412-956-21	INDUCTOR 27uH			
L105	1-414-078-11	INDUCTOR 10uH			
L201	1-414-078-11	INDUCTOR 10uH			
L202	1-414-078-11	INDUCTOR 10uH			
L203	1-414-078-11	INDUCTOR 10uH			
L204	1-412-951-11	INDUCTOR 10uH			
		< TRANSISTOR >			
Q001	8-729-402-42	TRANSISTOR	UN5213		
Q002	8-729-804-41	TRANSISTOR	2SB1122-S		
Q003	8-729-230-63	TRANSISTOR	2SC4116-YG		
Q004	8-729-402-42	TRANSISTOR	UN5213		
Q005	8-729-823-84	TRANSISTOR	FP102		
Q006	8-729-402-42	TRANSISTOR	UN5213		
Q007	8-729-028-36	TRANSISTOR	FX507-TL1		
Q008	8-729-230-63	TRANSISTOR	2SC4116-YG		
Q009	8-729-403-27	TRANSISTOR	XN4401		
Q010	8-729-420-20	TRANSISTOR	XN4312		
Q011	8-729-420-24	TRANSISTOR	2SB1218A-QRS		
Q101	8-729-230-63	TRANSISTOR	2SC4116-YG		
Q102	8-729-420-24	TRANSISTOR	2SB1218A-QRS		
Q104	8-729-402-42	TRANSISTOR	UN5213		
Q105	8-729-230-63	TRANSISTOR	2SC4116-YG		
Q110	8-729-420-24	TRANSISTOR	2SB1218A-QRS		
Q111	8-729-420-24	TRANSISTOR	2SB1218A-QRS		
Q112	8-729-230-63	TRANSISTOR	2SC4116-YG		
Q201	8-729-403-35	TRANSISTOR	UN5113		
Q202	8-729-402-42	TRANSISTOR	UN5213		
Q203	8-729-420-20	TRANSISTOR	XN4312		
Q204	8-729-020-99	TRANSISTOR	UN5215-RS		
Q205	8-729-420-53	TRANSISTOR	UN5115		
Q208	8-729-402-42	TRANSISTOR	UN5213		
		< RESISTOR >			
R001	1-218-867-11	METAL CHIP	6.8K	0.50%	1/16W
R002	1-218-881-11	METAL CHIP	27K	0.50%	1/16W
R003	1-216-818-11	METAL CHIP	560	5%	1/16W
R004	1-216-846-11	METAL CHIP	120K	5%	1/16W
R005	1-216-837-11	METAL CHIP	22K	5%	1/16W
R006	1-216-818-11	METAL CHIP	560	5%	1/16W
R007	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R008	1-218-829-11	METAL GLAZE	180	0.50%	1/16W

Ref.No.	Part No.	Description				Remark
R009	1-218-844-11	METAL CHIP	750	0.50%	1/16W	
R010	1-218-861-11	METAL CHIP	3.9K	0.50%	1/16W	
R011	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R012	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R013	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R014	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R015	1-216-810-11	METAL CHIP	120	5%	1/16W	
R016	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R017	1-218-879-11	METAL CHIP	22K	0.50%	1/16W	
R018	1-218-875-11	METAL CHIP	15K	0.50%	1/16W	
R019	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R020	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R021	1-218-863-11	METAL CHIP	4.7K	0.50%	1/16W	
R022	1-218-883-11	METAL CHIP	33K	0.50%	1/16W	
R023	1-216-819-11	METAL CHIP	680	5%	1/16W	
R024	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R025	1-216-819-11	METAL CHIP	680	5%	1/16W	
R026	1-216-298-00	METAL CHIP	2.2	5%	1/10W	
R027	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R036	1-218-837-11	METAL GLAZE	390	0.50%	1/16W	
R060	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R098	1-216-813-11	METAL CHIP	220	5%	1/16W	
R099	1-216-846-11	METAL CHIP	120K	5%	1/16W	
R100	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R101	1-216-817-11	METAL CHIP	470	5%	1/16W	
R103	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R104	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R105	1-216-824-11	METAL CHIP	1.8K	5%	1/16W	
R106	1-216-820-11	METAL CHIP	820	5%	1/16W	
R107	1-216-842-11	METAL CHIP	56K	5%	1/16W	
R108	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R109	1-216-864-11	METAL CHIP	0	5%	1/16W	
R110	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R111	1-216-818-11	METAL CHIP	560	5%	1/16W	
R112	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R113	1-216-864-11	METAL CHIP	0	5%	1/16W	
R114	1-216-864-11	METAL CHIP	0	5%	1/16W	
R115	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R116	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R117	1-218-877-11	METAL CHIP	18K	0.50%	1/16W	
R118	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R120	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R121	1-216-855-11	METAL CHIP	680K	5%	1/16W	
R122	1-216-820-11	METAL CHIP	820	5%	1/16W	
R123	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R124	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R125	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R126	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R127	1-220-397-11	METAL GLAZE	4.7M	5%	1/16W	
R129	1-216-819-11	METAL CHIP	680	5%	1/16W	

Ref.No.	Part No.	Description				Remark
R132	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R133	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R134	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R137	1-216-864-11	METAL CHIP	0	5%	1/16W	
R138	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R139	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R140	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R141	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R142	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R143	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R144	1-216-847-11	METAL CHIP	150K	5%	1/16W	
R146	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R147	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R148	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R149	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R153	1-216-819-11	METAL CHIP	680	5%	1/16W	
R154	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R155	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R156	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R160	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R161	1-216-809-11	METAL CHIP	100	5%	1/16W	
R162	1-216-809-11	METAL CHIP	100	5%	1/16W	
R163	1-216-809-11	METAL CHIP	100	5%	1/16W	
R166	1-216-864-11	METAL CHIP	0	5%	1/16W	
R167	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R168	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R169	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R170	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R177	1-216-864-11	METAL CHIP	0	5%	1/16W	
R178	1-216-864-11	METAL CHIP	0	5%	1/16W	
R180	1-216-864-11	METAL CHIP	0	5%	1/16W	
R184	1-216-295-11	CONDUCTOR, CHIP (2012)				
R191	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R192	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R193	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R195	1-218-885-11	METAL CHIP	39K	0.50%	1/16W	
R196	1-218-855-11	METAL CHIP	2.2K	0.50%	1/16W	
R197	1-218-897-11	METAL CHIP	120K	0.50%	1/16W	
R198	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R201	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R202	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R203	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R204	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R205	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R206	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R207	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R208	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R209	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R210	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R211	1-216-845-11	METAL CHIP	100K	5%	1/16W	

Ref. No.	Part No.	Description	Remark
R213	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R214	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R215	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R216	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R218	1-216-842-11	METAL CHIP 56K 5% 1/16W	
R220	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R221	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R222	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R223	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R224	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R225	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R226	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R227	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R228	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R229	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R232	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R233	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R234	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R235	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R236	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R237	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R238	1-216-842-11	METAL CHIP 56K 5% 1/16W	
R239	1-216-789-11	METAL CHIP 2.2 5% 1/16W	
R240	1-216-850-11	METAL CHIP 270K 5% 1/16W	
R241	1-218-883-11	METAL CHIP 33K 0.50% 1/16W	
R242	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R243	1-218-883-11	METAL CHIP 33K 0.50% 1/16W	
R244	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R247	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R248	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R249	1-218-875-11	METAL CHIP 15K 0.50% 1/16W	
R251	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R251	1-218-877-11	METAL CHIP 18K 0.50% 1/16W	
R252	1-216-864-11	METAL CHIP 0 5% 1/16W	
R253	1-216-864-11	METAL CHIP 0 5% 1/16W	
R254	1-216-864-11	METAL CHIP 0 5% 1/16W	
R255	1-216-864-11	METAL CHIP 0 5% 1/16W	
R256	1-216-864-11	METAL CHIP 0 5% 1/16W	
R257	1-216-864-11	METAL CHIP 0 5% 1/16W	
R258	1-216-864-11	METAL CHIP 0 5% 1/16W	
R260	1-216-864-11	METAL CHIP 0 5% 1/16W	
R261	1-216-864-11	METAL CHIP 0 5% 1/16W	
		< VARIABLE RESISTOR >	
RV101	1-223-733-21	RES, VAR, CARBON 10K (BRIGHT)	
		< SWITCH >	
S101	1-572-467-21	SWITCH, PUSH (1 KEY)(REVERSE)	

Ref. No.	Part No.	Description	Remark
		< TRANSFORMER >	
⚠T001	1-427-915-11	TRANSFORMER, INVERTER	
T002	1-429-459-21	TRANSFORMER, DC-DC CONVERTER	
		< VIBRATOR >	
X101	1-579-661-21	OSCILLATOR, CRYSTAL (4.43MHz)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

SECTION 6
ADJUSTMENTS

☞ : Changed Portion

11. Page D address list for standard 8 mm model (CCD-TRV30E/TRV40E/TRV50E, FV 836)

Note 1: The adjustment data initial value is the data input before performing video section adjustments (Page D) if the Page D data has been erased due to some reason.

Note 2: The data written in the adjustment data memo column are fixed.
After adjusting, check that these data have not been rewritten by mistake.

Note 3: In some case, data have been input to the page D address 91 to AF, BC to D3 and F0 to FF. This has no relation to the adjustment.

Note 4:
*1 : 06 (CCD-TRV30E (AEP, UK), FV 836)
17 (CCD-TRV30E (E, AUS, HK), TRV40E/TRV50E)
*2 : 04 (CCD-TRV30E, FV 836)
64 (CCD-TRV40E/TRV50E)
*3 : 58 (CCD-TRV30E (AEP, UK), FV 836)
78 (CCD-TRV30E (E, AUS, HK), TRV40E)
FC (CCD-TRV50E)
*4 : 2E (CCD-TRV30E, FV 836)
6F (CCD-TRV40E/TRV50E)
*5 : 00 (CCD-TRV30E)
40 (CCD-TRV40E/TRV50E)
FF (FV 836)
*6 : 30 (CCD-TRV30E)
40 (CCD-TRV40E)
50 (CCD-TRV50E)
FF (FV 836)
*7 : 2E (CCD-TRV40E/TRV50E)
34 (CCD-TRV30E, FV 836)
*8 : 40 (IC130 on AU-185 board is AN3996FHP)
☞ 29 (IC130 on AU-185 board is AN3988FHP)
*9 : ( ): 3" LCD model
[ ]: 4" LCD model

Address	Adjustment data	
	Initial value	Memo column
00		
01		
02	00	00
03	00	00
04	80	
05	0B	
06	66	
07	7F	
08	84	
09	8A	
0A	8E	
0B	00	00
0C		
0D		
0E		
0F		
10	00	
11	0A	
12	00	
13	00	
14	B6	B6
15	98	98
16	05	05
17 *1	06/17	06/17
18 *2	04/64	04/64
19	00	00
1A *3	58/78/FC	58/78/FC
1B *4	2E/6F	2E/6F
1C	80	80
1D	00	00
1E *5	00/40/FF	00/40/FF
1F *6	30/40/50/FF	30/40/50/FF
20 *7	2E/34	2E/34
21	08	08
22 *8	29/40	29/40
23	00	00
24	33	33
25	33	33
26	28	28
27	28	28
28	A8	A8
29	A8	A8
2A	AC	AC
2B	AC	AC

Table 6-3-2. (1)

3-7. LCD SYSTEM ADJUSTMENTS

Note 1: The backlight (fluorescent tube) is driven by a high voltage AC power supply.
Therefore, be careful not to touch the backlight holder as you will receive an electric shock.

Note 2: When replacing the LCD unit, ensure there will be no damages by static electricity.

Note 4: Set the BRIGHT knob to the center click position.

[Adjusting connector]

Most measuring points for adjusting the view-finder are concentrated at CN101 of the PD-62 board. Connect the measuring equipments via the measuring pin tool. The following table lists the pin numbers and signal names of CN101.

Pin No.	Signal Name	Pin No.	Signal Name
1	VB	2	+7.5V
3	VG	4	COM-O
5	VR	6	SPD
7	SYNC	8	$\overline{\text{HSY}}$
9	GND	10	GND

Table 6-3-1.

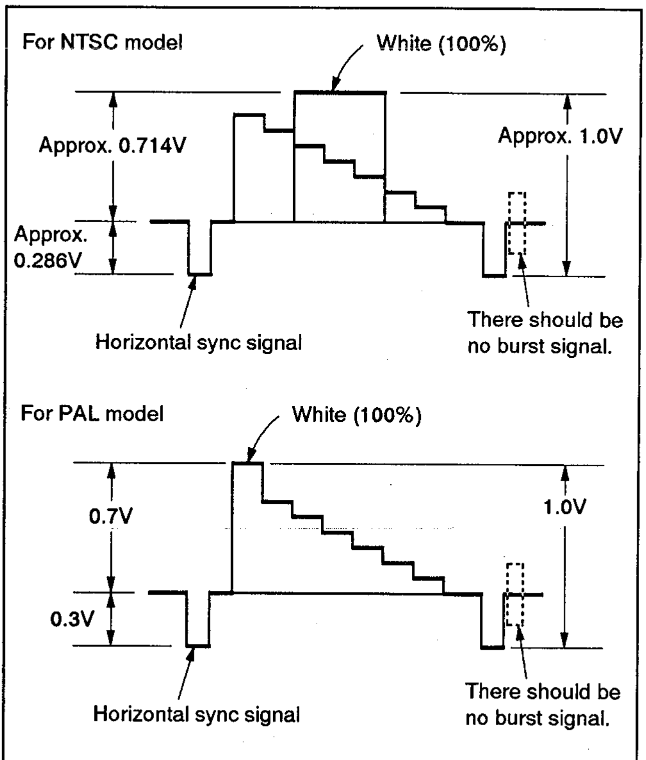
1.	Multi CPC jig	Parts Code: J-6082-311-A
	or Measuring pin tool for LCD	Parts Code: J-6082-192-A

[Power supply voltage]

Adjust the power supply voltage for the battery terminal so that Pin ⑩ of the CN102 of the PD-62 board (LCD UNREG) become 6.5 ± 0.1 Vdc.

[Video Input Signal for Adjusting]

If the signal column specifies "Color bar signal whose chroma signal and burst signal are turned off", input a color bar signal whose chroma signal and burst signal have been turned off to the video terminal as the video input signal for adjusting. Check that the input signal level is 1.0 Vp-p before adjusting. (Terminated at 75Ω)


For NTSC model
White (100%)
Approx. 0.714V
Approx. 1.0V
Approx. 0.286V
Horizontal sync signal
There should be no burst signal.
For PAL model
White (100%)
0.7V
1.0V
0.3V
Horizontal sync signal
There should be no burst signal.

Note: Set the REC mode and check the signal level.

Fig. 6-3-1. Color bar signal whose chroma signal and burst signals are turned off

1. EVR Initial Data Input

Mode	STOP
Signal	Arbitary
Adjustment Page	D

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Select page D, and input the data in the following table.
   Note: To write in the nonvolatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time the data is set.

Address	Data	
	NTSC	PAL
B0	69	8A
B1	99	82
B2	62	65
B3	74	74
B4	5D	5D
B5	7D	7F
B6	80	80
B7	40	40
B8	68	68
B9	82	82
BA	8A	8A
BB	80	80

Note: Never change the EEPROM data for replacing IC104 etc. besides in case of necessity.

2. VCO Adjustment (PD-62 board)

Set the free running frequency of the VCO.
If it is not correct, the image will waver.

Mode	STOP
Signal	No signal
Measurement Point	Pin ⑧ of CN101 ($\overline{\text{HSY}}$)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	B6
Specified Value	f=15734 ± 30 Hz (NTSC) f=15625 ± 30 Hz (PAL)

Connections:

1) Remove R180 (0 Ω resistor).

Adjusting method:

1) Change the data of page: D, address: B6 and adjust the frequency to the specified value.
2) Press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: 1, address: 00.
4) Connect R180 (0 Ω resistor).

3. Horizontal Display Position Adjustment (PD-62 board)

Adjust the position of the image.
If its position is not correct, it will slip to the right or left.

Mode	Record
Signal	Color bar
Measurement Point	CH1: Pin ⑦ of CN101 (H SYNC) CH2: Pin ⑥ of CN101 (SPD)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	BA
Specified Value	T=2.5 ± 0.1 μsec (NTSC) T=3.3 ± 0.1 μsec (PAL)

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: BA, and adjust the delay time (T) to the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 1, address: 00.

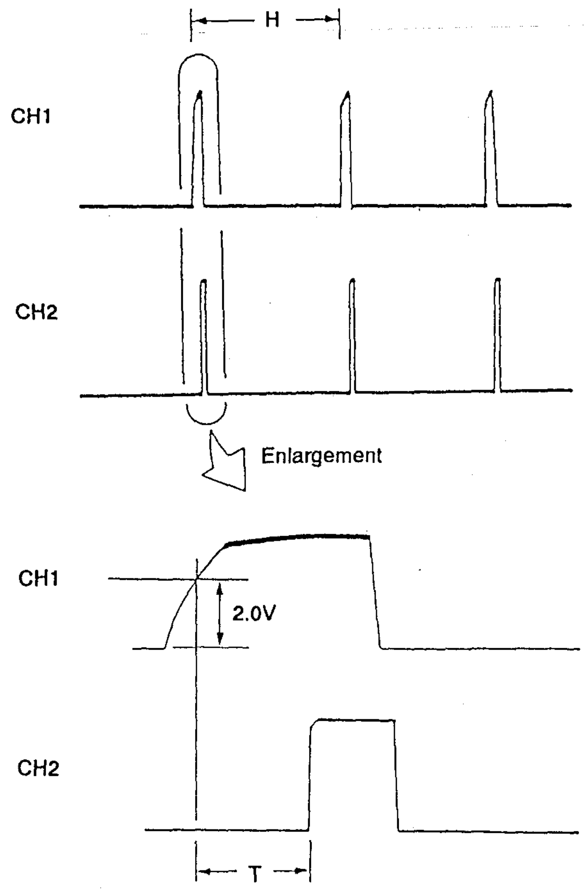


Fig. 6-3-2.

4. D RANGE Adjustment (PD-62 board)

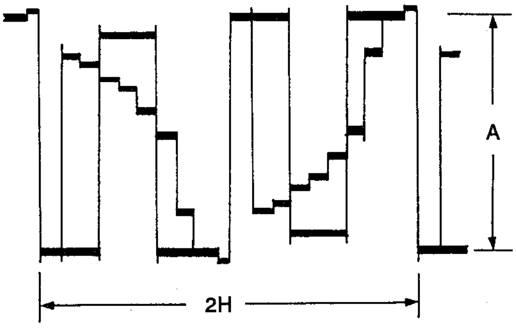
Adjust to the proper LCD panel driving dynamic range.
If it is not correct, the image will be saturated (whitish) or blackish.

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ③ of CN101 (VG)
Measuring Instrument	Oscilloscope External trigger: Pin ④ of CN101
Adjustment Page	D
Adjustment Address	B8
Specified Value	A=3.85 ± 0.05V

Note: Check that the BRIGHT knob is set to the center click position.

Adjusting method:
1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: B0, and adjust the amplitude level (A) of the VG signal to the specified value.
   Amplitude: Level difference between the reverse waveform pedestal and non-reversed waveform pedestal.
3) Press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 1, address: 00.

For NTSC model



For PAL model

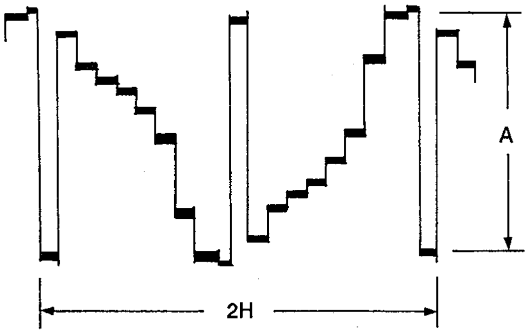


Fig. 6-3-3.

5. Contrast Adjustment (PD-62 board)

Adjust to the proper LCD panel driving video signal level.
If it is not correct, the image will be saturated (whitish) or blackish.

Mode	Record
Signal	10 step stair-step
Measurement Point	Pin ③ of CN101 (VG)
Measuring Instrument	Oscilloscope External trigger: Pin ④ of CN101
Adjustment Page	D
Adjustment Address	B5
Specified Value	A=1.40 ± 0.05V

Adjusting method:
1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: B5, and adjust the voltage (A) between the 20 IRE and 0 IRE to the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 1, address: 00.

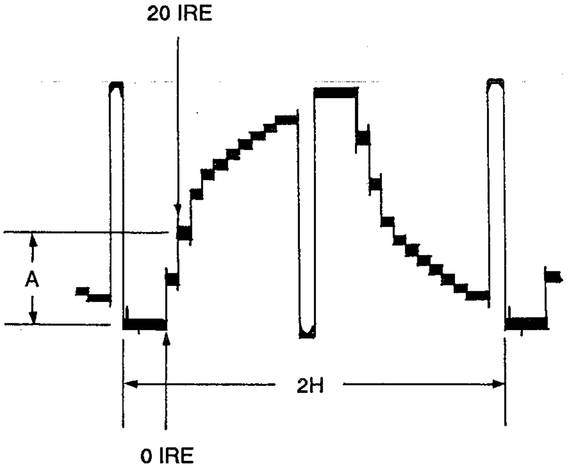


Fig. 6-3-4.

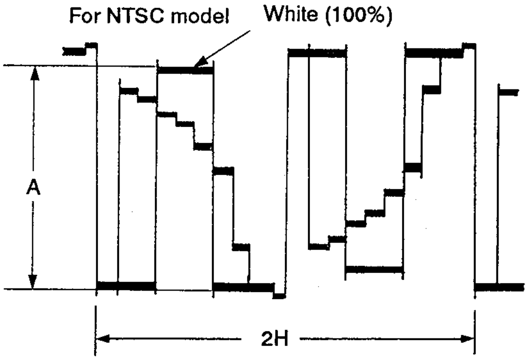
6. Bright Adjustment (PD-62 board)

Adjust to the proper LCD panel driving video signal level.
If it is not correct, the image will be saturated (whitish) or blackish.

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ③ of CN101 (VG)
Measuring Instrument	Oscilloscope External trigger: Pin ④ of CN101
Adjustment Page	D
Adjustment Address	B0
Specified Value	A=3.50 ± 0.05V

Note: Check that the BRIGHT knob is set to the center click position.

Adjusting method:
1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: B0, and adjust the amplitude level (A) of the VG signal to the specified value.
   Amplitude: Level difference between the reverse waveform pedestal and non-reversed waveform pedestal.
3) Press the PAUSE button of the adjusting remote commander.
4) Check that the specified value of "Contrast Adjustment" is satisfied. If not, perform "Contrast Adjustment" again.
5) Set data: 00 to page: 1, address: 00.



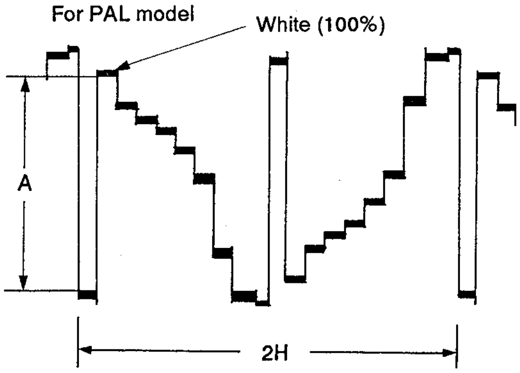


Fig. 6-3-5.

7. V-COM Level Adjustment (PD-62 board)

Set the contrast of the image.
If the contrast is not correct, the image will be blur (whitish) or saturated.

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ④ of CN101 (COM-O)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	B9
Specified Value	A=8.40 ± 0.05V (NTSC) A=8.70 ± 0.05V (PAL)

Adjusting method:
1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: B9, and adjust the V-COM level (A) to the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 1, address: 00.

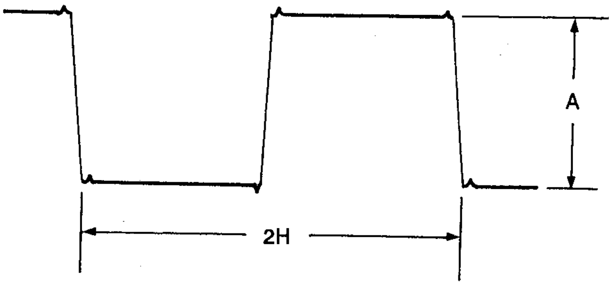


Fig. 6-3-6.

8. Color Adjustment for NTSC Model (PD-62 board)

Set the standard color level.
If the level is not correct, the image will be abnormal.

Mode	Record
Signal	Color bar
Measurement Point	Pin ③ of CN101 (VG)
Measuring Instrument	Oscilloscope External trigger: Pin ④ of CN101
Adjustment Page	D
Adjustment Address	B1
Specified Value	A=+0.10 ± 0.05V

Adjusting method:

1) Set data: 01 to page 1, address: 00.
2) Change the data of page: D, address: B1, and adjust so that the level difference (A) of white (75%) and green section to the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 1, address: 00.

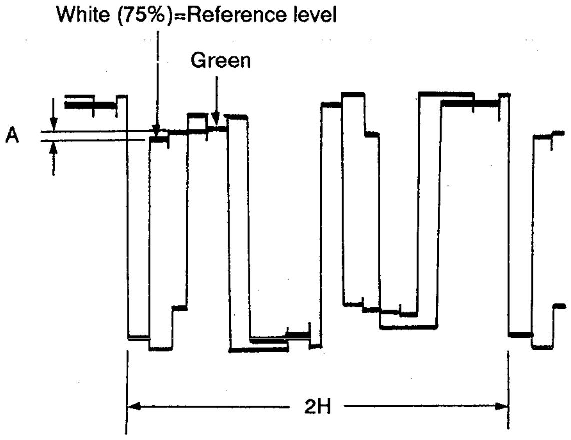


Fig. 6-3-7.

9. Hue Adjustment for NTSC Model (PD-62 board)

Set the standard hue.
If the lens is not correct, the image will be abnormal.

Mode	Record
Signal	Color bar
Measurement Point	Pin ① of CN101 (VB)
Measuring Instrument	Oscilloscope External trigger: Pin ④ of CN101
Adjustment Page	D
Adjustment Address	B2
Specified Value	A=+0.05 ± 0.05V

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Change the data of page: D, address: B2, and adjust so that the level difference (A) of yellow and cyan section to the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 1, address: 00.

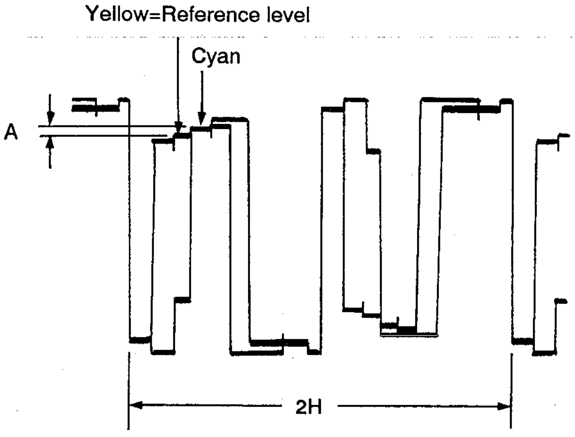


Fig. 6-3-8.

10. Burst Cleaning Adjustment for PAL Model (PD-62 board)

Adjust to the optimum PAL chroma signal demodulation phase.
If the phase is not correct, moire distortion and noises will stand out.

Mode	Record
Signal	Color bar
Measurement Point	Pin ① of CN101 (VB)
Measuring Instrument	Oscilloscope External trigger: Pin ④ of CN101
Adjustment Page	D
Adjustment Address	B2
Specified Value	Minimum amplitude of the flicker of the red section

Adjusting method:

1) Set data: 01 to page 1, address: 00.
2) Change the data of page: D, address: B2, and adjust so that the amplitude of the flicker of the green section (A) becames minimum.
3) Press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 1, address: 00.

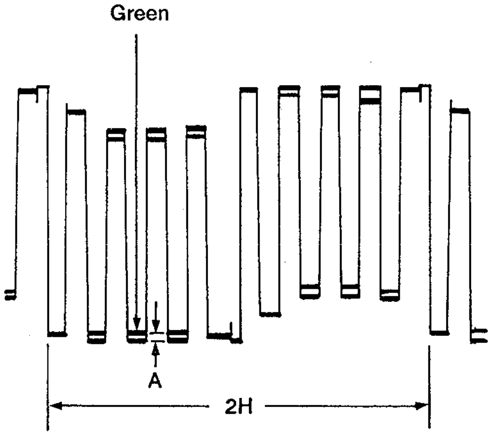


Fig. 6-3-9.

11. Color Adjustment for PAL Model (PD-62 board)

Set the standard color level.
If the level is not correct, the image will be abnormal.

Mode	Record
Signal	Color bar
Measurement Point	Pin ③ of CN101 (VG)
Measuring Instrument	Oscilloscope External trigger: Pin ④ of CN101
Adjustment Page	D
Adjustment Address	B1
Specified Value	A=–0.30 ± 0.05V

Adjusting method:

1) Set data: 01 to page 1, address: 00.
2) Change the data of page: D, address: B1, and adjust so that the level difference (A) of white (100%) and green section to the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 1, address: 00.

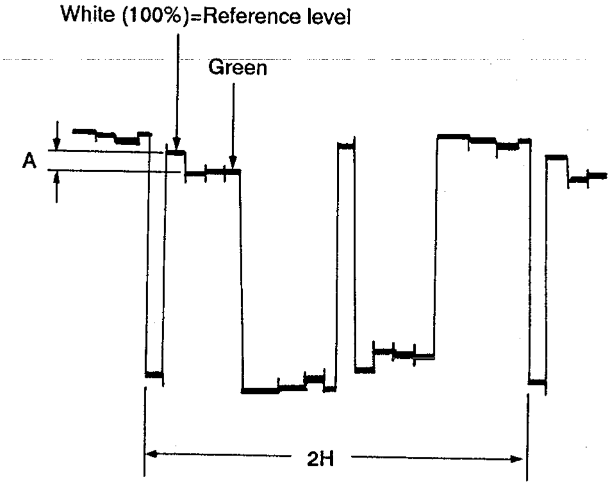


Fig. 6-3-10.

12. V COM Adjustment

Adjust to the proper DC bias of the common polarity drive signal of the LCD panel. If it is not correct, the image will be rough, flickers will be produced easily, and vertical lines will stand out.

Mode	Playback • pause
Signal	Alignment tape: For checking operations (WR5-5NSP (NTSC) WR5-5CSP (PAL)) Color bar section
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	B7

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) After memorizing the data of address: 1B of page: D, set data: 6D to page: D, address: 1B, and press the PAUSE button of the adjusting remote commander.
3) Set the playback pause state using the key on the main unit.
4) Change the data using the PLAY and STOP buttons of the adjusting remote commander, and observe the pattern of the noise bar. Continuously press the PLAY button when a pattern representing a head clogging is observed. There should be a point where black dots can be seen clearly. At this time, assume the data as DA. In the same way, press the STOP button continuously. There sould be a point where black dots can be seen clearly. At this time, assume the data as DB.
5) Change DA and DB to the hexadecimal notation and obtain DA′ and DB′.
(See Service manual "Hexadecimal notation-Decimal notation".)
6) Calculate DC′ using the following equation (for calculating hexadecimal notation).
DC′=(DA′+DB′) ÷ 2
7) Convert DC′ to a hexadecimal notation and obtain DC.
(Raise decimals to the next whole number)
8) Set the data of page: D, address: B7 to DC, and press the PAUSE button of the adjusting remote commander.
9) Set the data memorized at step 2) to address: 1B of page: D, and press the PAUSE button of the adjusting remote commander.
10) Set data: 00 to page: 1, address: 00.

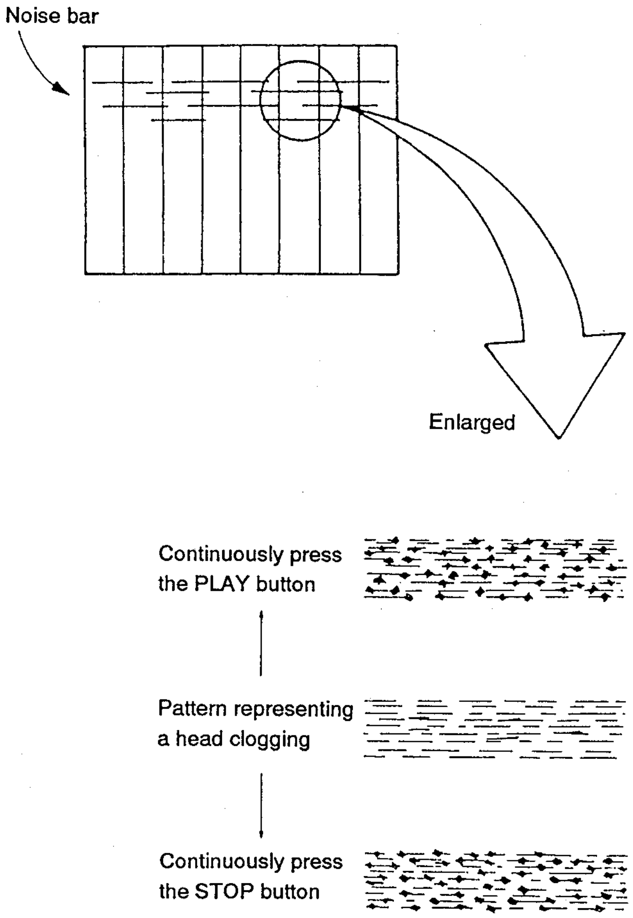

Noise bar
Enlarged
Continuously press the PLAY button
Pattern representing a head clogging
Continuously press the STOP button

Fig. 6-3-11.

13. White Balance Adjustment

Adjust to the proper white balance level.
If it is not correct, the color reproducibility of the LCD panel will be poor.

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	B3, B4
Specified Value	The display should not be colored

Adjusting method:

1) Set data: 01 to page: 1, address: 00.
2) Check that the data of page: D, address: B3 and B4 are at the initial value.

Address	Data
B3	74
B4	5D

3) Check that the LCD display is not colored. If it is, change the data of address: B3 and address: B4 of page: D, and adjustment the display is not colored.
4) Press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 1, address: 00.

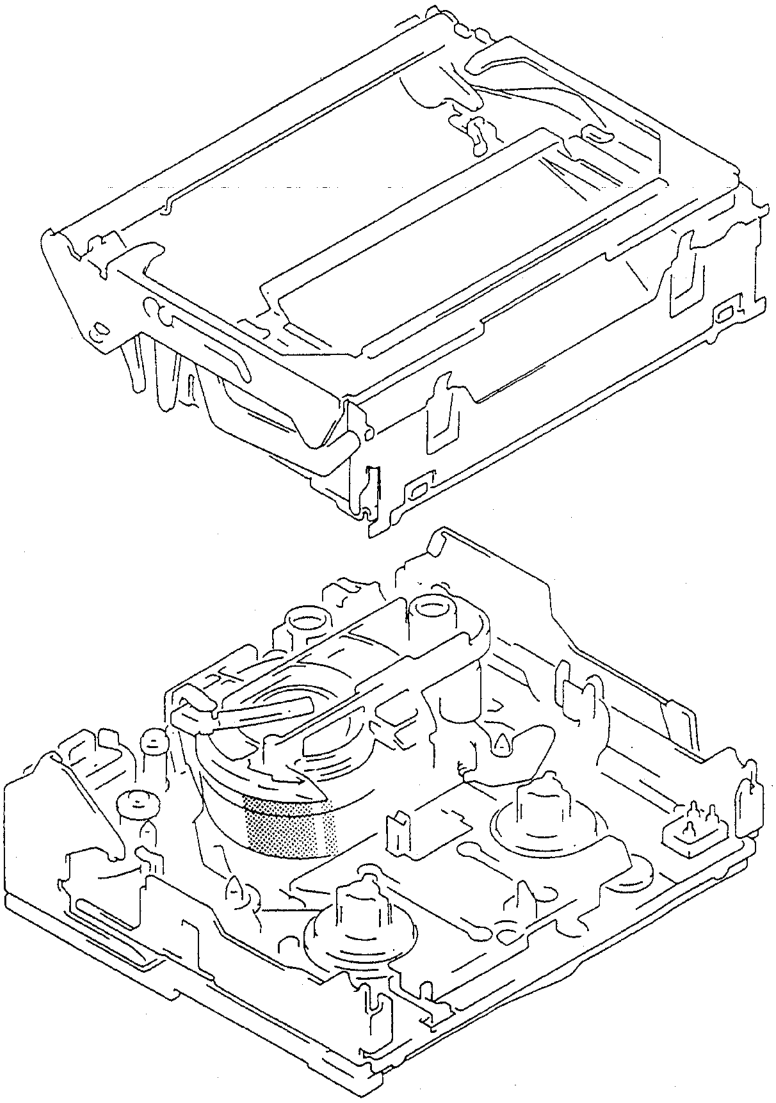
8 mm Video MECHANICAL ADJUSTMENT MANUAL Ⅳ

V12995

A MECHANISM

Video 8

File with the SERVICE MANUAL



8 VIDEO RECORDER

SONY®

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1. PREPARATION FOR MECHANICAL CHECK, ADJUSTMENT AND REPLACEMENT

For removal of the cabinet and boards, refer to "Disassembly" in each Service Manual.
Mechanical adjustment is done in the USE mode. (To select the USE mode, refer to "1-3, Handling of Mode Selector".)

1-1. CASSETTE COMPARTMENT ASSEMBLY

1. Removal (Fig. 1)

1) Select the USE mode.
2) Push the part ⓐ of lock arm ❶ toward the arrow 🅐 to unlock from lock guide ❷ , and raise the cassette compartment as shown in Fig. a.
3) Remove two screws ❸ and remove the LS frame ❹ toward the arrow 🅑.
4) With the cassette compartment assembly ❺ pushed in arrow 🅒 direction, distort tabs ⓑ and ⓒ of MD side plate toward the arrow 🅓 to disengage from catches ⓓ and ⓔ of cassette compartment assembly respectively.
In such a case, insert a screwdriver between MD side plate and catch and disengage the tab ⓑ first, then disengage the tab ⓒ for easy removal as shown in Fig. b.
5) Raise the cassette compartment assembly ❺ in the opposite direction of arrow 🅒 until the shafts ⓕ and ⓖ are disengaged, and push left and right side plates toward arrow 🅓 to remove the cassette compartment assembly.

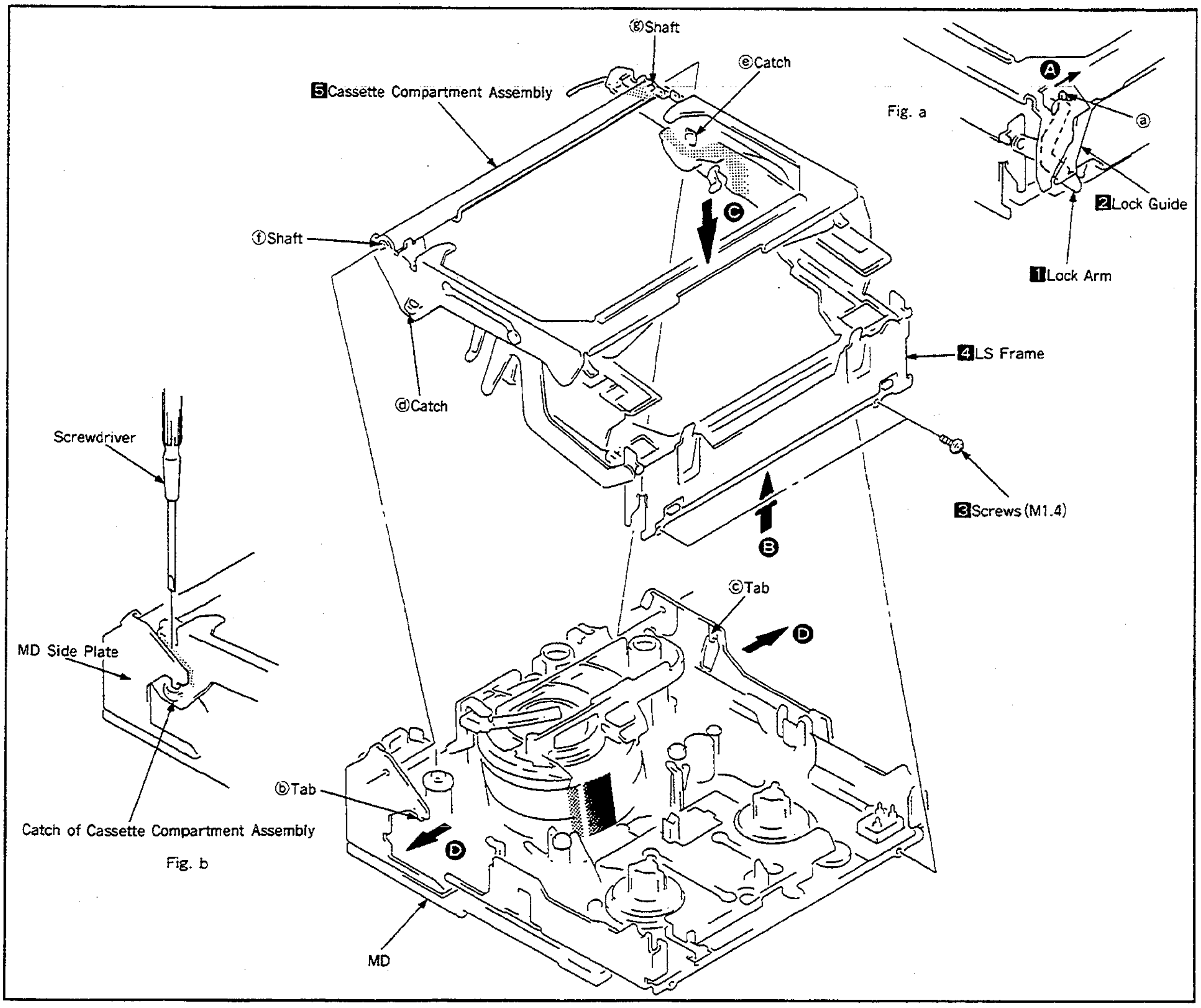

ⓖShaft
ⓔCatch
❺Cassette Compartment Assembly
Fig. a
🅐
ⓐ
❷Lock Guide
❶Lock Arm
🅒
ⓕShaft
❹LS Frame
ⓓCatch
Screwdriver
❸Screws (M1.4)
🅑
ⓒTab
🅓
MD Side Plate
ⓑTab
🅓
Catch of Cassette Compartment Assembly
Fig. b
MD

Fig. 1

2. Mounting (Fig. 2)

1) Select the USE mode.
2) Draw the cassette holder ❻ of cassette compartment assembly ❺ toward the arrow 🅔, and lower the LS frame ❹ toward the arrow 🅕.
3) With the cassette compartment assembly ❺ tilted by about 45° against MD, insert shafts ⓕ and ⓖ of cassette compartment assembly into holes ⓗ and ⓘ of MD side plate respectively.
   At this time, the part ⓙ of torsion bar must be positioned on the side ⓚ of LS flexible board (FP-443) (not on the side ⓛ), as shown in Fig. c.
4) Holding holes ⓗ and ⓘ of MD side plate, press the cassette compartment assembly ❺ so that its catches ⓓ and ⓔ are engaged with tabs ⓑ and ⓒ of MD side plate. In such a case, the lock arm ❶ of cassette compartment assembly must be inserted into a groove in the guide rail ❼ on the MD side plate as shown in Fig. d.
5) Insert left and right side plates ⓜ and ⓝ of LS frame ❹ inside the LS chassis ❽.
6) Push down the cassette compartment to lock.

Note : Make sure that the shafts ⓕ, ⓖ and the tabs ⓞ, ⓟ are set in the MD side plate properly.

7) Tighten two screws ❸.

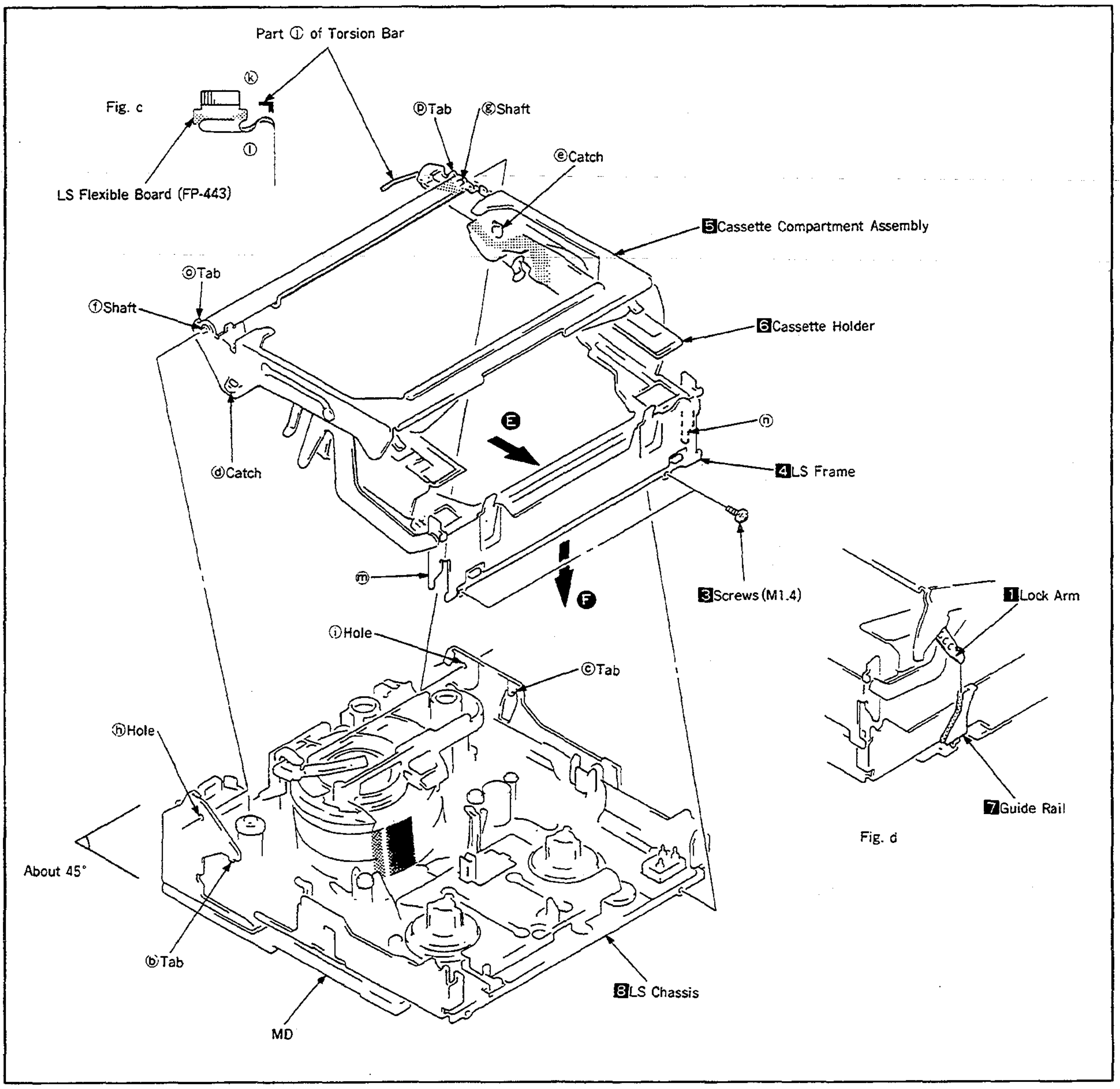

Part ⓙ of Torsion Bar
ⓚ
Fig. c
ⓛ
LS Flexible Board (FP-443)
ⓟTab
ⓖShaft
ⓔCatch
❺Cassette Compartment Assembly
ⓞTab
ⓕShaft
❻Cassette Holder
🅔
ⓝ
ⓓCatch
❹LS Frame
ⓜ
🅕
❸Screws (M1.4)
❶Lock Arm
ⓘHole
ⓒTab
ⓗHole
About 45°
ⓑTab
❽LS Chassis
MD
❼Guide Rail
Fig. d

Fig. 2

1-2. OPERATION WITH CASSETTE COMPARTMENT ASSEMBLY REMOVED (Fig. 3)

1) Referring to the Service Manual, supply power with the cabinet and camera removed. (Make the mechanical deck ready to operate.)
2) Place the cap ❷ on the Reflector C ❶.
3) Press the pin of the push switch ❸ (ON state) and fix it with adhesive tape ❹ in that state.

Note : Press the asterisked (∗) pin to set the REC mode.
(This is not required for the other modes.)

4) Push the cassette compartment DOWN switch ❺ in an arrow direction as shown in Fig. a.

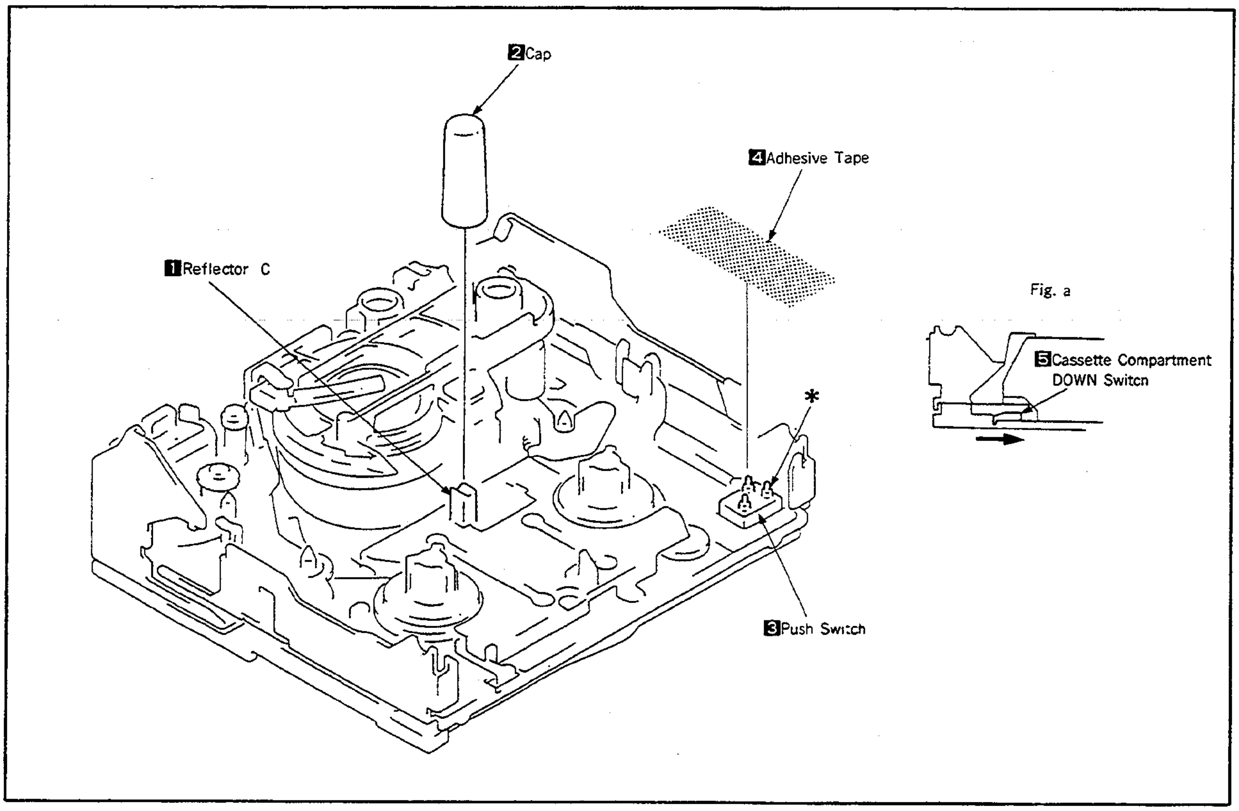

❷Cap
❹Adhesive Tape
❶Reflector C
∗
❸Push Switch
Fig. a
❺Cassette Compartment DOWN Switch

Fig. 3

1-3. HANDLING OF MODE SELECTOR

- Stick the MD process table label to the mode selector IV panel, then mount the panel on the mode selector.
  U,U', FL, O, O' and A mechanisms have different mode indications respectively. Select your disired type. (Fig.4)

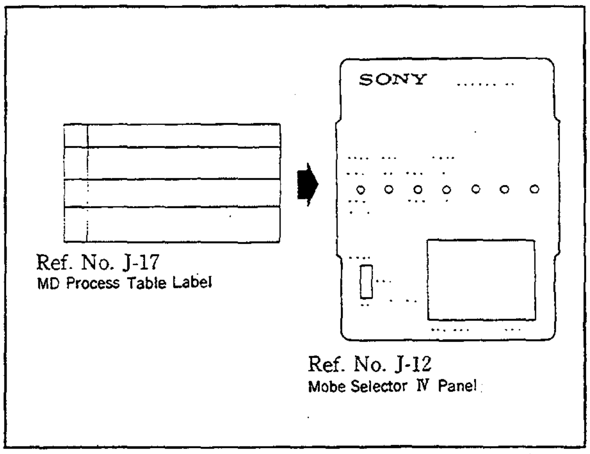

SONY
Ref. No. J-17
MD Process Table Label
Ref. No. J-12
Mobe Selector Ⅳ Panel

Fig. 4

1 Construction (Fig.5)

2 Connection (Fig.6)

For CCD-FX410 series

1) Insert the FP-425 flexible connector ❶ and M-SW connector ❷ into the mode selector IV conversion connector ❸ respectively.

3. Handling

1) Use the M mode selector buttons only.
2) During mode selection, "BLANK" lights up when no mode is being selected.
3) If the right M mode selector button is kept pressed, END, EJECT, USE, LOAD, READY,TURN, REC and FF light up in that order.
4) When changing over from the FF mode back to the END mode, press the left M mode selector botton to select your desired mode.

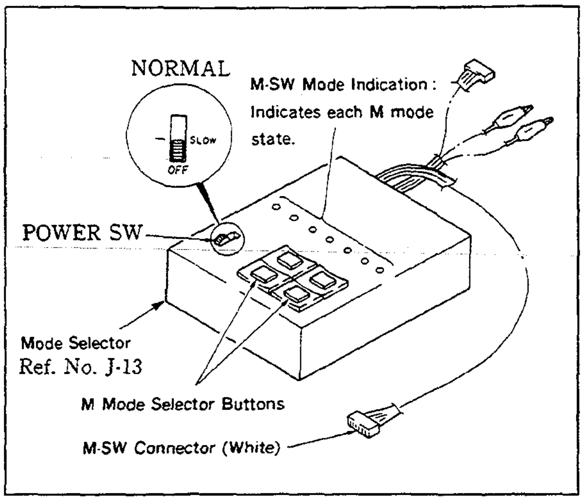

NORMAL
SLOW
OFF
M-SW Mode Indication : Indicates each M mode state.
POWER SW
Mode Selector
Ref. No. J-13
M Mode Selector Buttons
M-SW Connector (White)

Fig. 5

For CCD-FX410 series

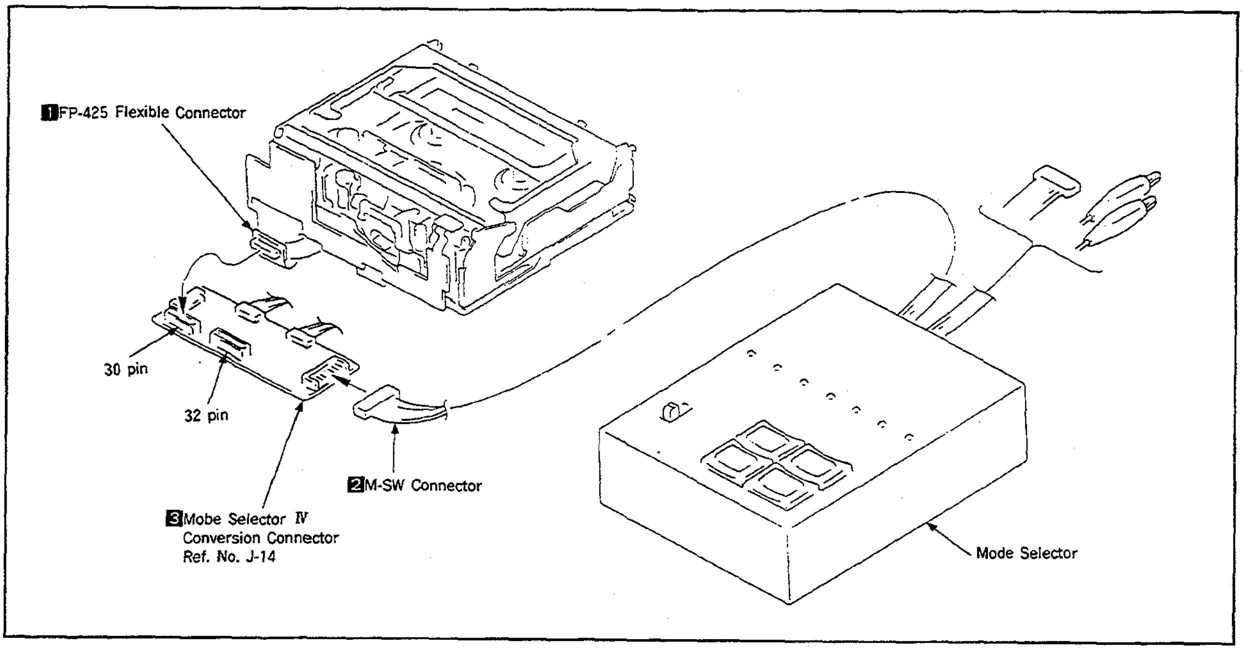
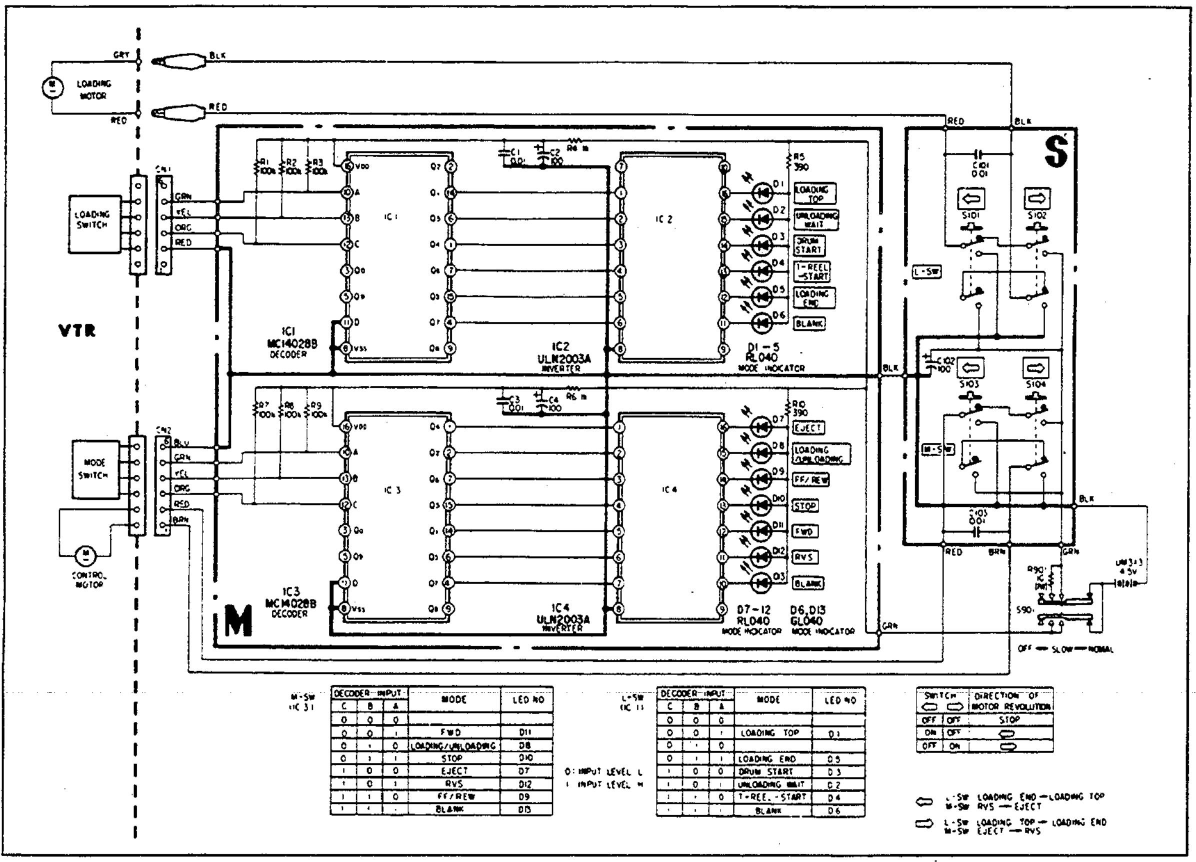

❶FP-425 Flexible Connector
30 pin
32 pin
❷M-SW Connector
❸Mobe Selector Ⅳ
Conversion Connector
Ref. No. J-14
Mode Selector

Fig. 6

1-4. MODE SELECTOR SCHEMATIC DIAGRAM


GRY
BLK
LOADING MOTOR
RED
CN1
GRN
YEL
ORG
RED
LOADING SWITCH
VTR
CN2
BLU
GRN
YEL
ORG
RED
BRN
MODE SWITCH
CONTROL MOTOR
R1 100k
R2 100k
R3 100k
C1 0.01
C2 100
R4 1k
IC1
IC1 MC14028B DECODER
IC2
IC2 ULN2003A INVERTER
R5 390
D1
D2
D3
D4
D5
D6
LOADING TOP
UNLOADING WAIT
DRUM START
T-REEL -START
LOADING END
BLANK
D1~5 RL040 MODE INDICATOR
R7 100k
R8 100k
R9 100k
C3 0.01
C4 100
R6 1k
IC 3
IC 4
IC3 MC14028B DECODER
IC4 ULN2003A INVERTER
R10 390
D7
D8
D9
D10
D11
D12
D13
EJECT
LOADING /UNLOADING
FF/REW
STOP
FWD
RVS
BLANK
D7~12 RL040 MODE INDICATOR
D6,D13 GL040 MODE INDICATOR
M
S
RED
BLK
C101 0.01
S101
S102
L-SW
C102 100
S103
S104
M-SW
C103 0.01
RED
BRN
GRN
R901 10 1W
UM3/3 4.5V
S901
OFF — SLOW — NOMAL

M-SW (IC 3)

DECODER INPUT			MODE	LED NO
C	B	A		
0	0	0		
0	0	1	FWD	D11
0	1	0	LOADING/UNLOADING	D8
0	1	1	STOP	D10
1	0	0	EJECT	D7
1	0	1	RVS	D12
1	1	0	FF/REW	D9
1	1	1	BLANK	D13

0: INPUT LEVEL L
1: INPUT LEVEL H

L-SW (IC 1)

DECODER INPUT			MODE	LED NO
C	B	A		
0	0	0		
0	0	1	LOADING TOP	D1
0	1	0		
0	1	1	LOADING END	D5
1	0	0	DRUM START	D3
1	0	1	UNLOADING WAIT	D2
1	1	0	T-REEL -START	D4
1	1	1	BLANK	D6

SWITCH		DIRECTION OF MOTOR REVOLUTION
⇦	⇨	
OFF	OFF	STOP
ON	OFF	⇦
OFF	ON	⇨

⇦ L-SW LOADING END → LOADING TOP
M-SW RVS → EJECT

⇨ L-SW LOADING TOP → LOADING END
M-SW EJECT → RVS

1-5. MODE SELECTOR PARTS LIST

Ref. No	Part No.	Description		
		CAPACITOR		
C1	1-108-579-00	MILER	0.01μF	50V
C2	1-123-333-00	ELECT	100μF	24V
C3	1-108-579-00	MILER	0.01μF	50V
C4	1-123-333-00	ELECT	100μF	24V
C101	1-108-579-00	MILER	0.01μF	50V
C102	1-123-333-00	ELECT	100μF	24V
C103	1-108-579-00	MILER	0.01μF	50V
		DIODE		
D1	8-719-812-31	DIODE TLR123		
D2	8-719-812-31	DIODE TLR123		
D3	8-719-812-31	DIODE TLR123		
D4	8-719-812-31	DIODE TLR123		
D5	8-719-812-31	DIODE TLR123		
D6	8-719-812-33	DIODE TLG123A		
D7	8-719-812-31	DIODE TLR123		
D8	8-719-812-31	DIODE TLR123		
D9	8-719-812-31	DIODE TLR123		
D10	8-719-812-31	DIODE TLR123		
D11	8-719-812-31	DIODE TLR123		
D12	8-719-812-31	DIODE TLR123		
D13	8-719-812-33	DIODE TLG123A		

Ref. No	Part No.	Description		
		IC		
IC1	8-752-240-28	IC TC4028BP		
IC2	8-752-120-03	IC μPA2003C		
IC3	8-759-240-28	IC TC4028BP		
IC4	8-759-120-03	IC μPA2003C		
		RESISTOR		
R1	1-247-179-00	CARBON	100K	1/4W
R2	1-247-179-00	CARBON	100K	1/4W
R3	1-247-179-00	CARBON	100K	1/4W
R4	1-247-131-00	CARBON	1K	1/4W
R5	1-247-121-00	CARBON	390	1/4W
R6	1-247-131-00	CARBON	1K	1/4W
R7	1-247-179-00	CARBON	100K	1/4W
R8	1-247-179-00	CARBON	100K	1/4W
R9	1-247-179-00	CARBON	100K	1/4W
R10	1-247-121-00	CARBON	390	1/4W
R901	1-214-594-00	METAL	10	1W

2. PERIODIC CHECK AND MAINTENANCE

- Carry out the following maintenance and periodic checks in order not only to fully exhibit the functions and performance of the set, but also for the equipment and tape. After repairing, service the set as follows, regarless of the length of use.

2-1. CLEANING OF ROTARY DRUM ASSEMBLY

1) Gently apply chamois cloth (Ref. No. J-2) soaked in cleaning liquif (Ref. No.J-1) to the rotary drum assembly.
   Clean it by rotating the upper rotary drum assembly slowly counterclockwise by hand.

Note : Do not rotate the motor by power or rotate the upper rotary drum assembly clockwise by hand. Also, the head tip is highly likely to be damaged if the chamois cloth is moved in a pependicular direction to the it. make sure to follow the instructions above for cleaning the rotarydrum assembly.

2-2. CLEANING OF TAPE PATH (Fig.7)

1) In the USE mode, clean the tape running system (TG - 1,- 2,- 3,- 4,- 5, - 6, - 7, pinch roller, and capstan shaft) and the lower drum, using a super fine applicator (Ref. No. J - 3) soaked in the cleaning liquid.

Note : Note that no oil or grease of each link mechanism adheres to the super fine applicator (Ref. No. J - 3).

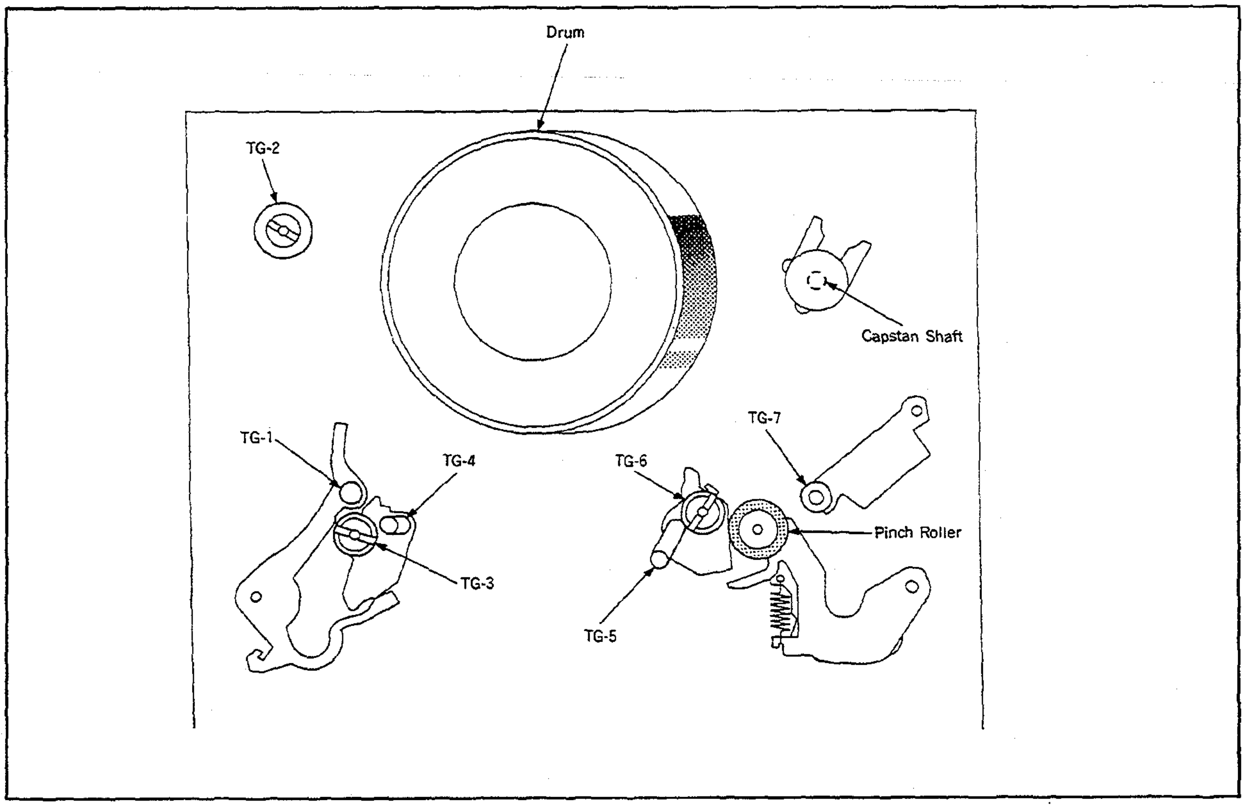


Fig. 7

2-3. PERILDIC CHECK ITEMS

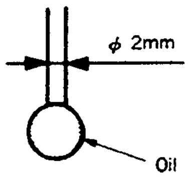
Location of Maintenance and check		Hours of Use (H)										Remarks
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
Tape trans-portion System	Cleaning of tape path surface	○	○	○	○	○	○	○	○	○	○	Be careful of oil
	Cleaning and degaussing of rotary assembly	○	○	○	○	○	○	○	○	○	○	Be careful of oil
Driving System	Relay belt	—	☆	—	☆	—	☆	—	☆	—	☆	3-944-539-01
	Capstan shaft	—	◎	—	◎	—	◎	—	◎	—	◎	Be adsolutely careful not to get oil on the tape path surface.
	Relay pulley shaft	—	◎	—	◎	—	◎	—	◎	—	◎	
	Loading motor	—	☆	—	☆	—	☆	—	☆	—	☆	A-7040-304-A
Performance Confirmation	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
	FWD. RVS torque measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

○ : Cleaning ◎ : Oil ☆ : Confirmation

Note : When overhauling, refer to the items above to replace parts.

Note : Concerning oil

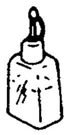
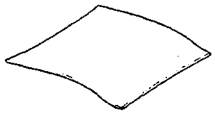
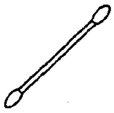
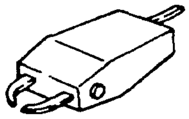
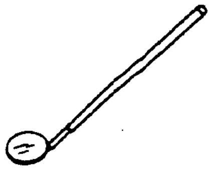
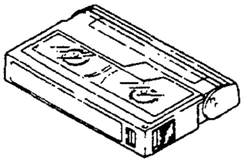
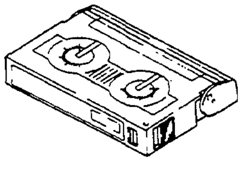
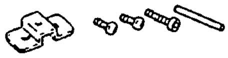
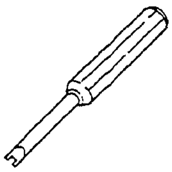
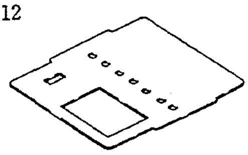
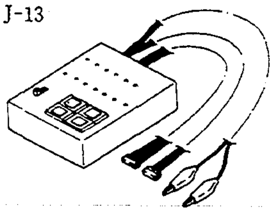
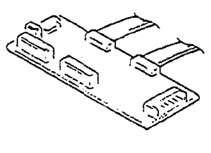
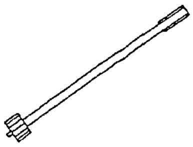
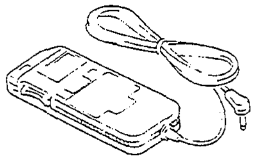
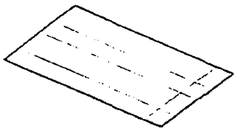
- Be sure to use specified oil. (If you use oil with different viscosity, etc., it may cause troubles.)
  Oil : Part No. 7-661-018-18 (Mitsubishi Diamond Oil Hydrofluid NT - 68)
- When lubricating bearings, be sure use oil free from dust, etc. (If you use oil with dust, etc. contained, it may cause bearings to be worn out or seized.)
- A drip of oil refers to an amount attached to the tip of a ϕ 2mm stick shown in the right figure.



Service jigs list

No.	Name	Part No.	Fixture No.	Usage and Others
1	Cleaning fluid	Y-2031-001-0		
2	Chamois cloth	2-034-697-00		
3	Super fine applicator (Made by NIPPON APPLICATOR, P752D)			
4	Head degausser	Widely available		
5	Small mirror for adjustment Spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
6	Alignment tape NTSC (WR5-1N) PAL (WR5-1C)	8-967-995-01 8-967-995-06		Tape path
9	FWD and RVS winding torque cassette	J-6080-824-A	GD-2086	
10	Rotary drum jig	(Attached to the maintenance rotary upper drum)		
11	Screwdriver for tape path	J-6082-026-A		For tape guide adjustment
12	Mode selector Ⅳ panel	J-6082-105-A		
13	Mode selector	J-6080-825-A		For all models
14	Mode selector Ⅳ conversion connector	J-6082-167-A		
15	FWD B.T. adjusting driver	J-6082-182-A		
16	Adjusting remote controller	J-6082-053-B		Tape path (Setting of PATH mode)
17	MD process table label	J-6082-166-A		

equipment
- Oscilloscope
- Analog tester (20 kΩ)

J-1 	J-2 	J-3 	J-4 
J-5 	J-6 	J-9 	J-10  (Attached to the maintenance rotary upper drum)
J-11 	J-12 	J-13 	J-14 
J-15 	J-16 	J-17 	

3. MECHANICAL CHECK, ADJUSTMENT AND REPLACEMENT

Note : Use the mode selector (Ref. No. J-13) for the following mechanical checks, adjustments and replacements.

Note : The modes in ☐ are those set by pressing the mode selector buttons.

3-1. RETAINER, GOOSENECK ASSEMBLY (Fig. 8)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Remove a screw **1**.
3) Remove the Retainer, Gooseneck assembly **2**.

2. Mounting

1) Mount the Retainer, Gooseneck assembly **2** with its two tabs and holes of LS chassis engaged with its hole and a boss of LS chassis.
2) Tighten the screw **1**.
3) Referring to 1-1, mount the cassette compartment assembly.

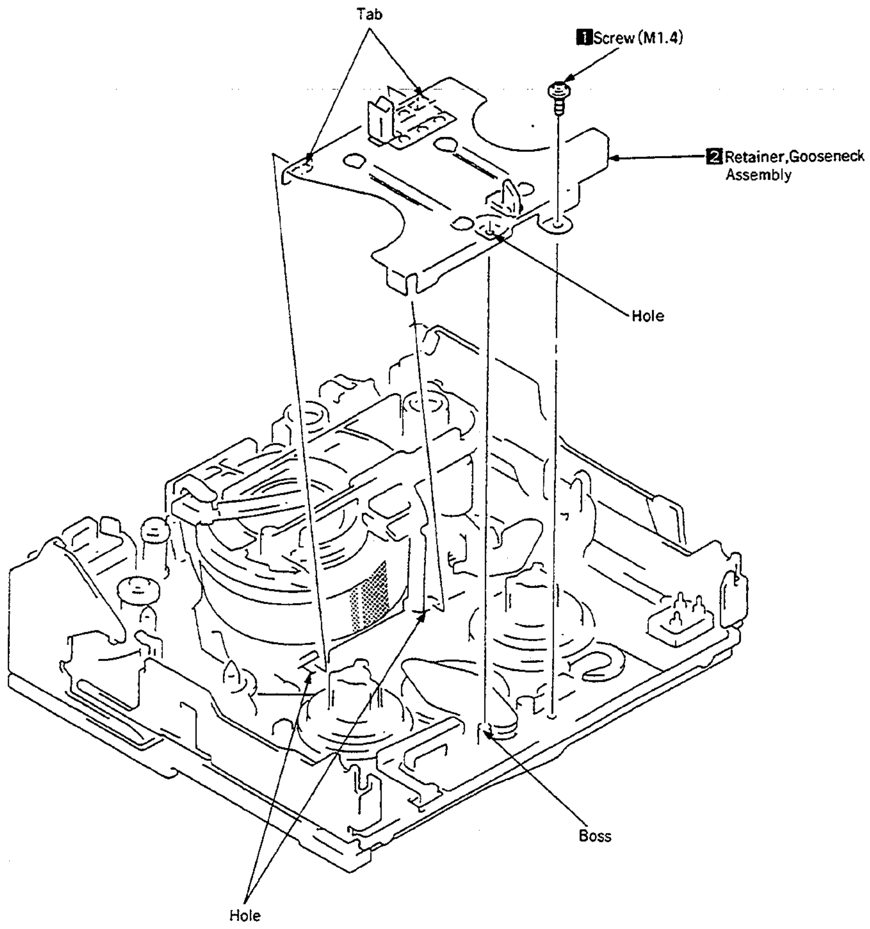


Fig. 8

3-2. PROTECTOR BASE ASSEMBLY (Fig. 9)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Remove two screws 1, then the protector base assembly 2.

2. Mounting

1) Mount the protector base assembly 2 with its three hole engaged with two dowels of mechanical chassis, and a dowel of TG-5 Base Holder 3.
2) Tighten two screws 1.
3) Referring to 1-1, mount the cassette compartment assembly.

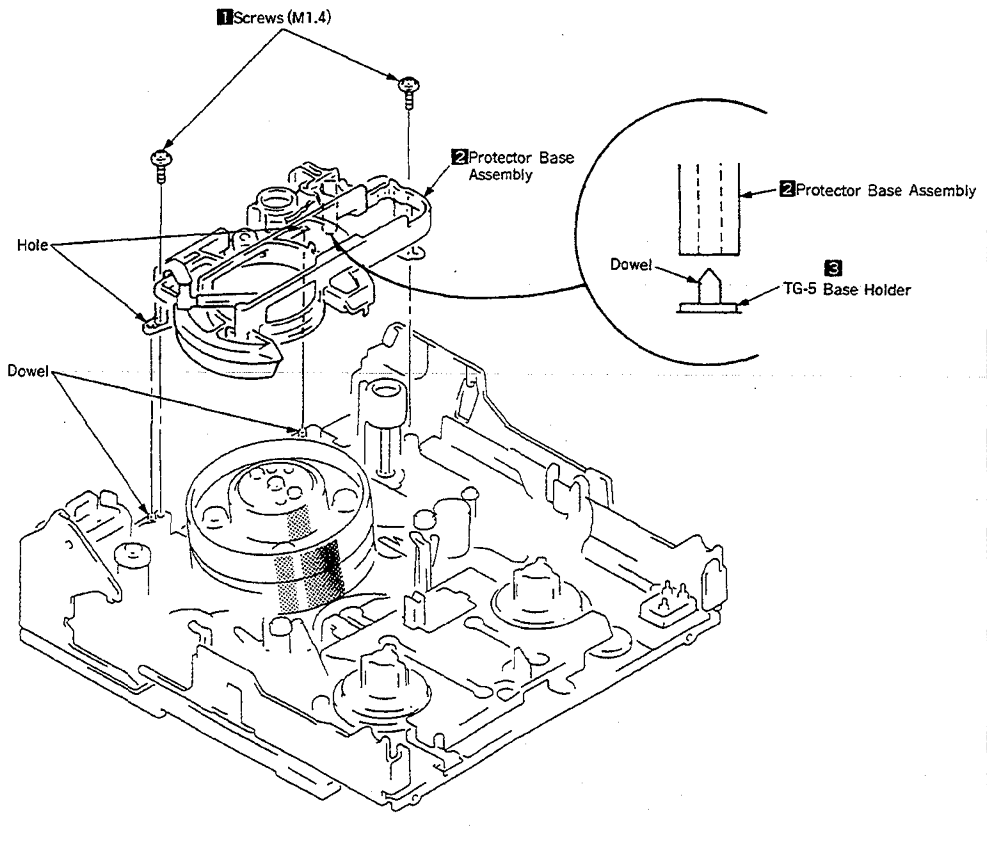

1 Screws (M1.4)
2 Protector Base Assembly
Hole
Dowel
2 Protector Base Assembly
Dowel
3 TG-5 Base Holder

Fig. 9

3-3. DRUM ASSEMBLY (Fig. 10)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-2, remove the protect base assembly.
3) Disconnect the connector of FP-444 flexible board 1 on the back of MD.
4) Remove three screw 2, then the drum assembly 3.

Note : Do not touch the outer surfaced of drum (hold portions Ⓐ and Ⓑ of drum).

2. Mounting

1) Mount the drum assembly 3 while aligning with two dowels ⓐ of chassis.

Note : Do not touch the outer surfaced of drum (hold portions Ⓐ and Ⓑ of drum).

2) Tighten three screw assemblies 2 in the order of 1, 2 and 3.

Note : Tighten lightly not to deform the drum lead.

3) Apply a screw locking agent to prevent screws ftom loosening.

Note : In tightening the screws, pushing down the drum extremely will allow the drum to float up.

4) Connect the connector of FP-444 flexible board 1 on the back of MD.
5) Referring to 3-2, mount the protect base assembly.
6) Referring to 1-1, mount the cassette compartment assembly.

Note : After mounting, make tape path adjustment in Section 4.

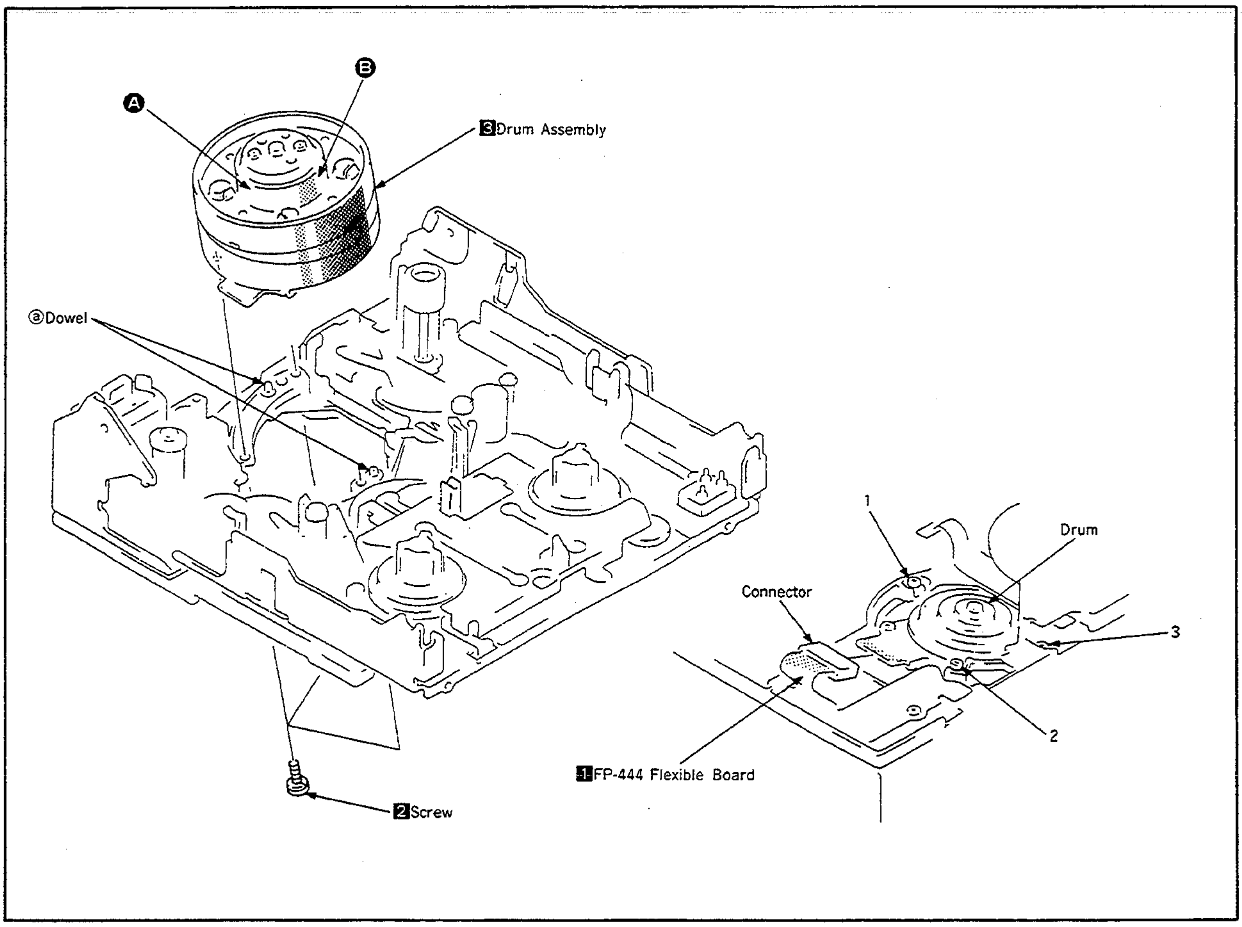


Fig. 10

3-4. CAPSTAN MOTOR ASSEMBLY (Fig. 11)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Remove two screw 1, then the capstan cover 2.
3) Remove the screw 3, then the capstan motor assembly 4.

2. Mounting

1) Mount the capstan motor assembly 4 and tighten the scre 3.

Note : In mounting the capstan motor assembly, hold lightly the capstan motor assembly until the rotor gear aligns with the change gear Assy, then insert fully the assembly when both gears are engaged completely by manually rotating the rotor. (Take care not to damage the change gear Assy.)

2) Mount the capstan cover 2 and tighten two screws 1.
3) Referring to 1-1, mount the cassette compartment assembly.

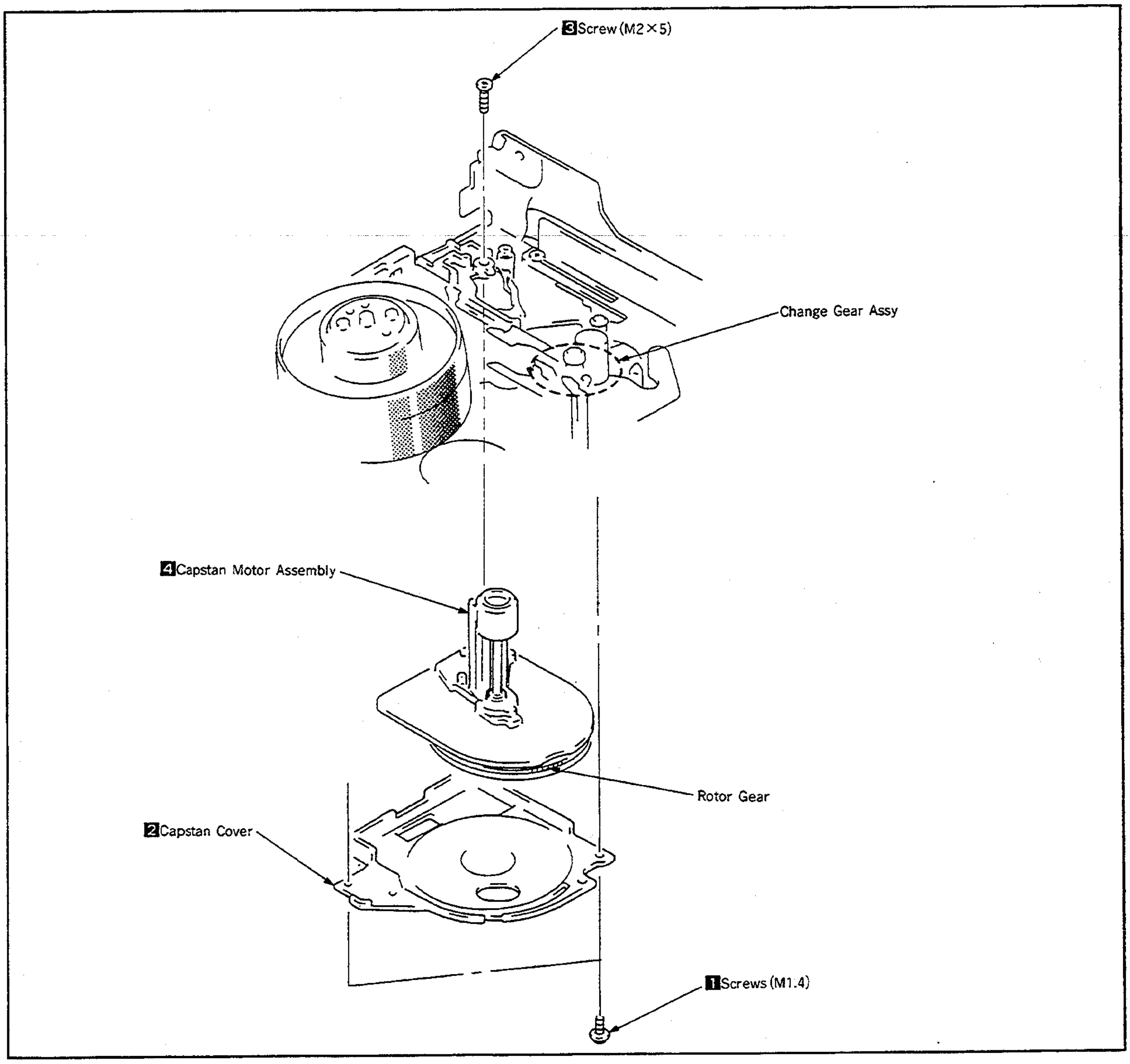

3Screw (M2×5)
Change Gear Assy
4Capstan Motor Assembly
Rotor Gear
2Capstan Cover
1Screws (M1.4)

Fig. 11

3-5. TAKE-UP REEL TABLE ASSEMBLY AND T- SOFT ASSEMBLY (Fig. 12)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Remove the take-up reel table assembly ❶.
4) Remove the T soft assembly ❷, then the T soft arm ❸.

2. Mounting

1) Mount the T soft arm ❸ with its long hole ⓒ engaged with the boss ⓓ of LS chassis.
2) Mount the T soft assembly ❷ with its tab ⓐ engaged with a square hole ⓑ of T soft arm, as shown in Fig. a.
3) Mount the take-up reel table assembly ❶ and rotate it toward the arrow Ⓐ to be latched with T hard claw.
4) Referring to 3-1. mount the Retainer, Gooseneck assembly.
5) Referring to 1-1, mount the cassette compartment assembly.

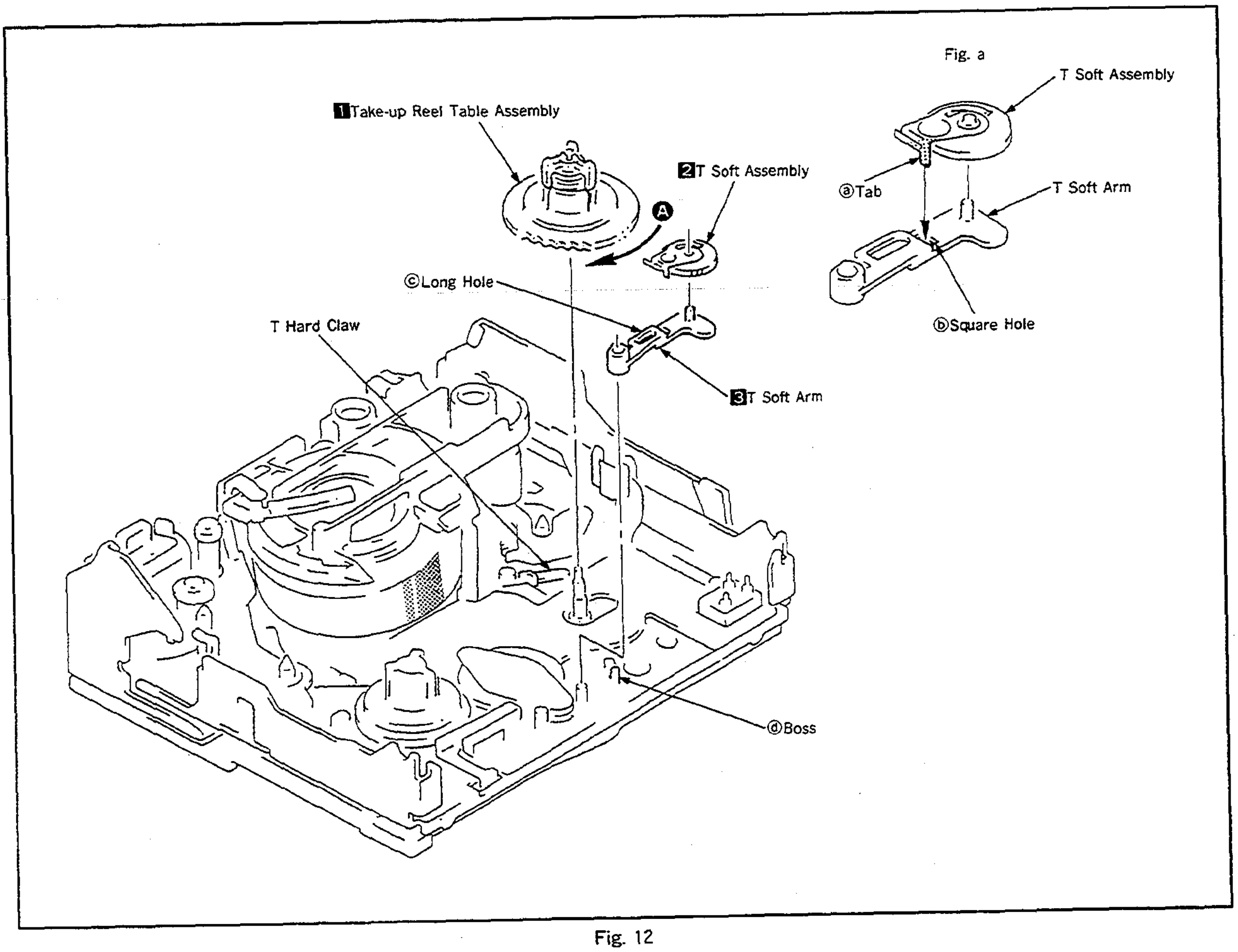

❶Take-up Reel Table Assembly
❷T Soft Assembly
Ⓐ
ⓒLong Hole
T Hard Claw
❸T Soft Arm
ⓓBoss
Fig. a
T Soft Assembly
ⓐTab
T Soft Arm
ⓑSquare Hole

Fig. 12

3-6. PINCH ARM ASSEMBLY (Fig. 13)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Select the READY mode.
3) Remove a washer ❶, then the pinch arm assembly ❷.

2. Mounting

1) Select the READY mode.
2) Hooking a spring of pinch arm assembly ❷ to the casse positioning boss on the chassis, mount the pinch arm asser bly on the shaft of LS chassis assembly as shown in Fig. a.
3) Push in the spring with tweezers up to the root of boss as shown in Fig. b.
4) Mount the washer ❶.
5) Referring to 1-1, mount the cassette compartment assembly.

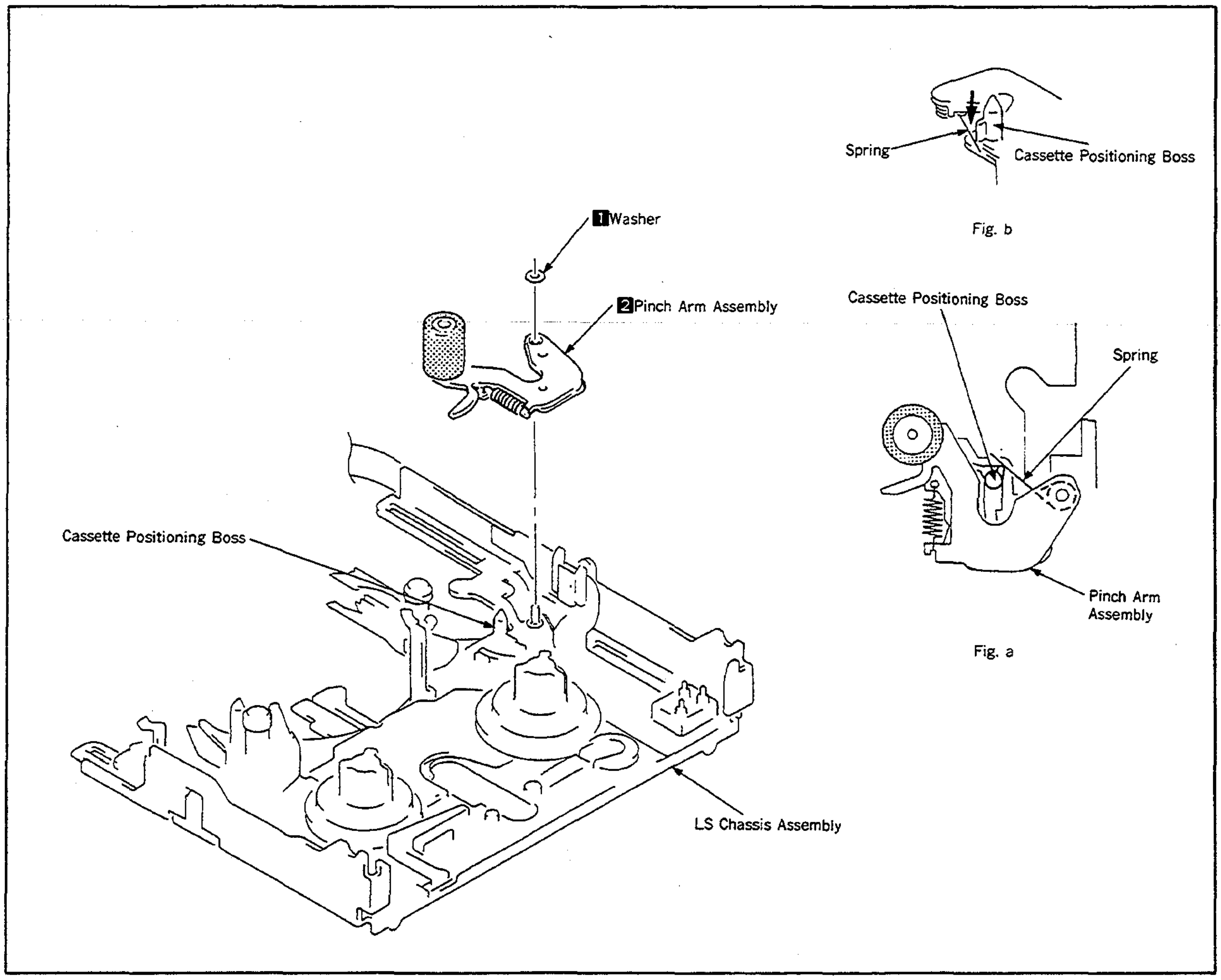

Spring
Cassette Positioning Boss
❶Washer
❷Pinch Arm Assembly
Cassette Positioning Boss
Spring
Cassette Positioning Boss
Pinch Arm Assembly
LS Chassis Assembly

Fig. b

Fig. a

Fig. 13

LS CHASSIS ASSEMBLY (Fig. 14)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Remove a screw ❶, TG-5 base holder ❷, and LS flexible board ❸.
5) Remove a lock washer ❹, then the gooseneck as sembly ❺.
6) Remove four screws ❻, then the LS chassis assembly ❼.

2. Mounting

1) Select the $\boxed{\text{USE}}$ mode.
2) Confirm that the T hard claw and the outsert on the back of LS chassis are positioned as shown in Fig. a. (The T hard claw must be higher than corner ⓐ of chassis hole.) If not high, turn the outsert in the arrow direction while pushing the T hard claw from LS chassis to the chassis.
3) Sliding the GL slider, align the top edge of long hole ⓑ in GL slider with the edge face ⓒ of LS chassis hole as shown in Fig. b.
4) Mount the LS chassis assembly ❼ on the chassis.

Note : At this time, aligh a dowel ⓓ on LS chassis with a long hole ⓔ of No.7 guide on chassis, a long hole of GL slider with a GL arm pin, a groove of LS cam plate with an LS arm pin respectively as shown in Fig. c and d.

5) Tighten four screws ❻.
6) Mount the LS flexible board ❸ and TG-5 base holder ❷,then tighten the screw ❶.
7) Mount the Gooseneck assembly ❺ and fix it with a washer ❹.

Note : Using the mode selector, confirm that loading and unloading are performed smoothly.

8) Referring to 3-2, mount the protector base assembly.
9) Referring to 3-1, mount the Retainer, Gooseneck assembly.
10) Referring to 1-1, mount the cassette compartment assembly.

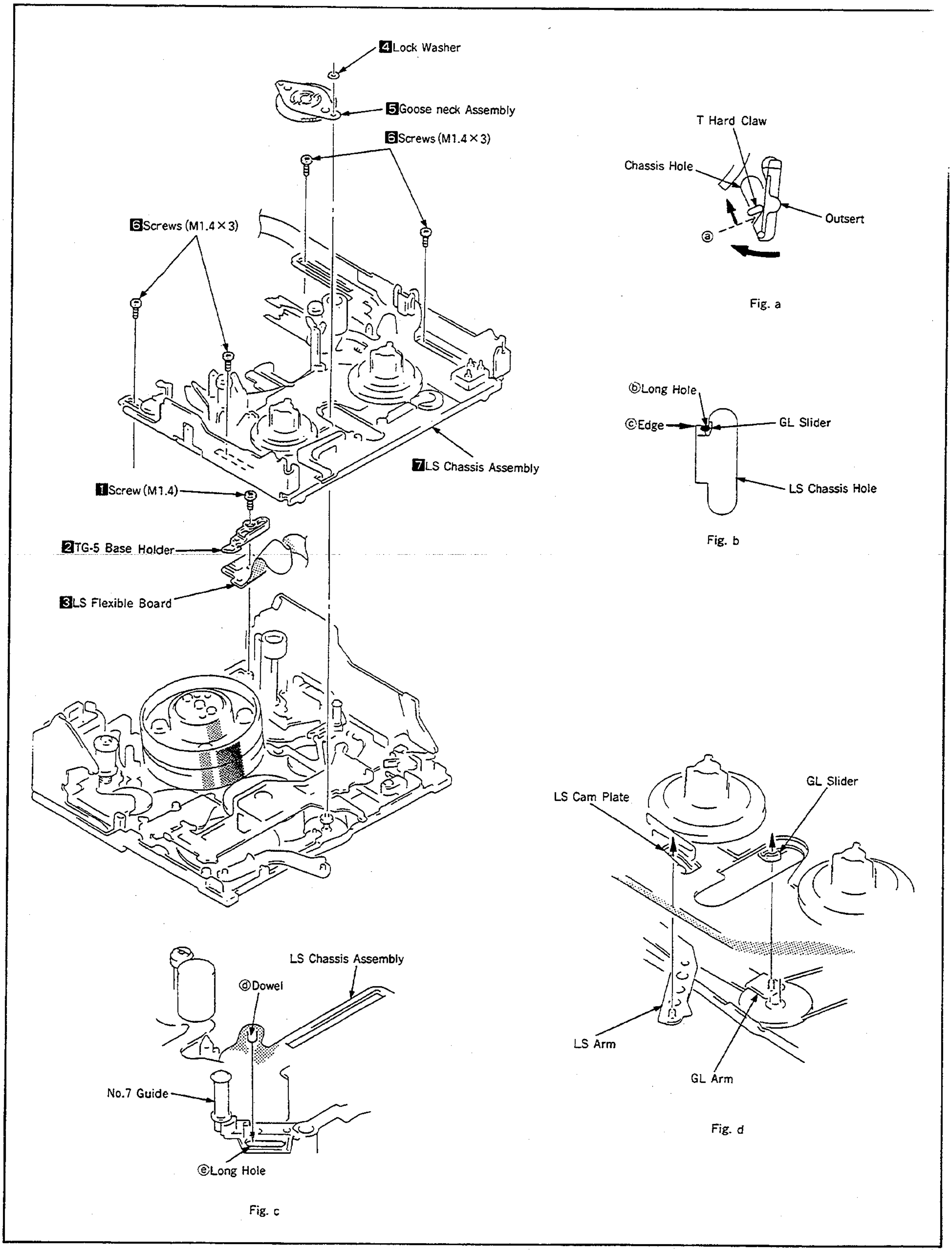

4 Lock Washer
5 Goose neck Assembly
6 Screws (M1.4 × 3)
6 Screws (M1.4 × 3)
7 LS Chassis Assembly
1 Screw (M1.4)
2 TG-5 Base Holder
3 LS Flexible Board
T Hard Claw
Chassis Hole
Outsert
ⓐ
ⓑ Long Hole
ⓒ Edge
GL Slider
LS Chassis Hole
LS Chassis Assembly
ⓓ Dowel
No.7 Guide
ⓔ Long Hole
LS Cam Plate
GL Slider
LS Arm
GL Arm

Fig. a

Fig. b

Fig. c

Fig. d

Fig. 14

3- GUIDE BASE T ASSEMBLY AND GUIDE BASE S ASSEMBLY (Fig. 15, 16)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Push in the GL slider ❶ toward the arrow Ⓐ, and remove the guide base T assembly ❷ and guide base S assembly ❸ from the guide rail respectively as shown in Fig. 15.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T sofr assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assembly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

6) Turning the guide base T assembly ❷ and guide base S assembly ❸ respectively, align the shaft to hole to remove as shown in Fig. a.

2. Mounting

1) Turning the guide base T assembly ❷ and guide base S assembly ❸ respectively, align the shaft with a hole to mount as shown in Fig. a (Fig. 15).
2) On the back side of chassis, insert the guide arm T assembly ❹, guide arm S assembly ❺ and GL slider ❶ from position shown in Fig.b to position shown in Fig. c. Also, aligning the guide base T assembly ❷ and guide base S assembly ❸ with the respective guide rails, push in the GL slider ❶ toward the arrow Ⓑ as shown in Fig. 16.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T soft assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assembly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

3) Referring to 3-7, mount the LS chassis assembly.
4) Referring to 3-2, mount the protector base assembly.
5) Referring to 3-1, mount the Retainer, Gooseneck assembly.

Note : At this time, confirm that the T soft assembly is surely engaged with the T soft arm.

6) Referring to 1-1, mount the cassette compartment assembly.

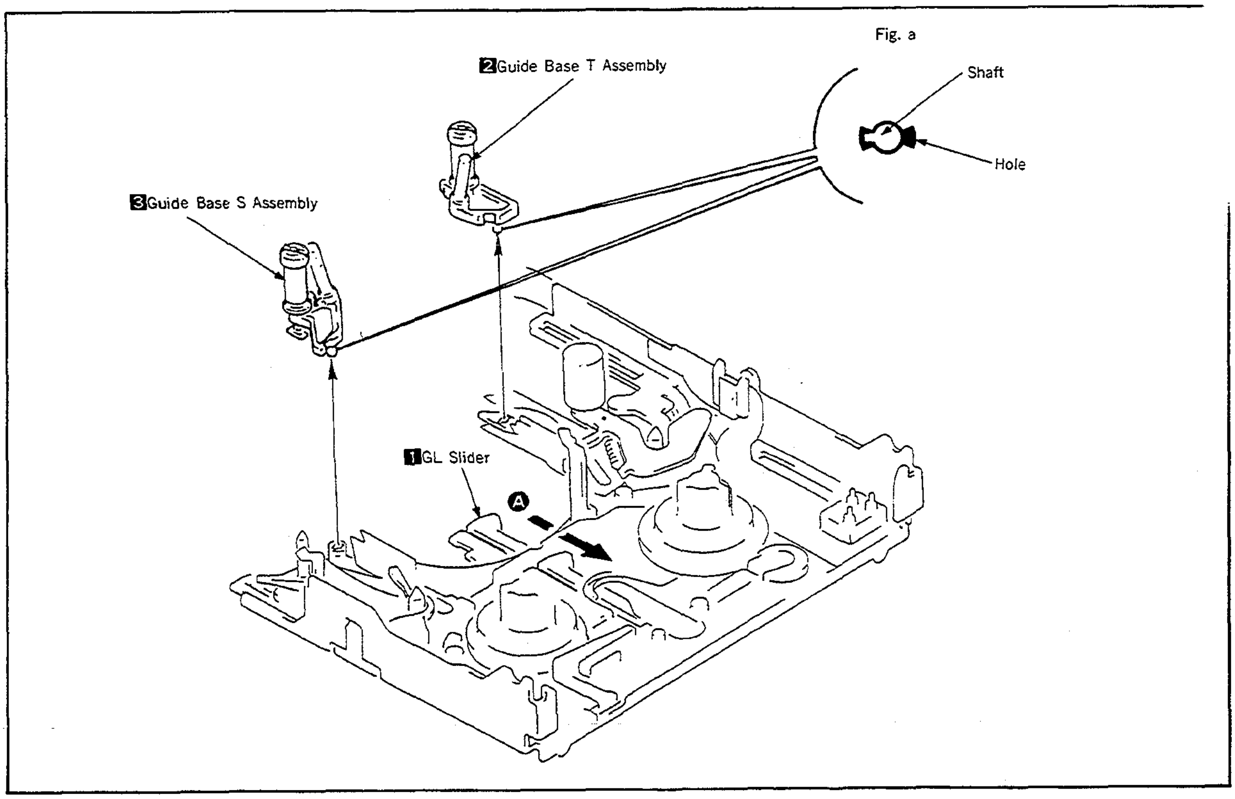


Fig. a
2 Guide Base T Assembly
Shaft
Hole
3 Guide Base S Assembly
1 GL Slider
Ⓐ

Fig. 15

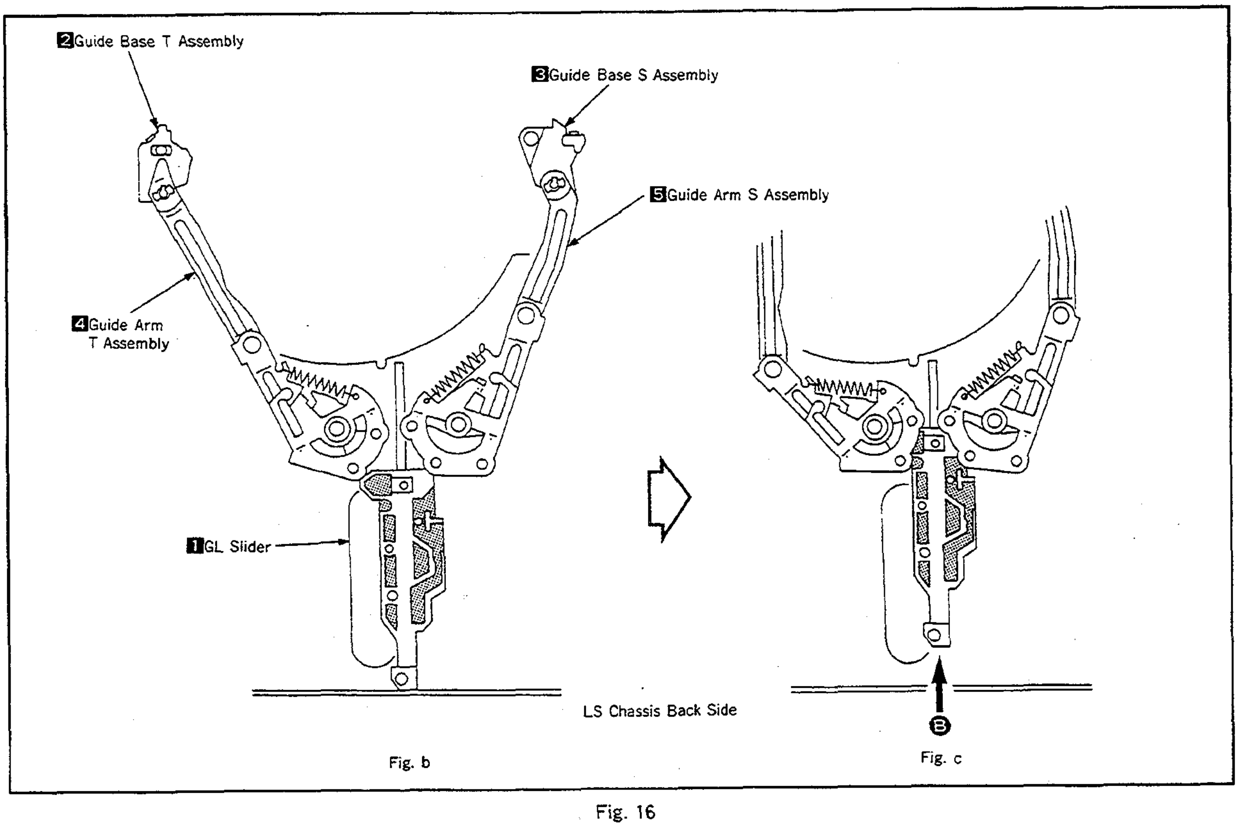

2 Guide Base T Assembly
3 Guide Base S Assembly
5 Guide Arm S Assembly
4 Guide Arm T Assembly
1 GL Slider
LS Chassis Back Side
Ⓑ

Fig. b

Fig. c

Fig. 16

3 GUIDE ARM T ASSEMBLY AND GUIDE ARM S ASSEMBLY (Fig. 17)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Referring to 3-8, remove the guide base T assembly and guide base S assembly.
6) Remove lock washers **1**, then the guide arm T assembly **2** and guide arm S assembly **3** respectively from the back side of chassis.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T soft assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assmbly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

2. Mounting

1) Mount the guide arm T assembly **2** and guide arm S assembly **3**, then fix them with a lock washer **1** respectively.

Note : Do not invert the LS chassis up side down, otherwise the T reel table assembly, T soft arm and T soft assembly will drop. Also, take care not to allow the S reel table to float up, or the tension regulator string bends. (Refer to 3-5 T Reel Table Assembly and T Soft Assembly, and 3-10 S Reel Table Assembly and TG-1 Arm Assembly.)

2) Referring to 3-8, mount the guide base T assembly, guide-base S assembly and GL slider.
3) Referring to 3-7, mount the LS chassis assembly.
4) Referring to 3-2, mount the protector base assembly.
5) Referring to 3-1, mount the Retainer, Gooseneck assembly.
6) Referring to 1-1, mount the cassette compartment assembly.

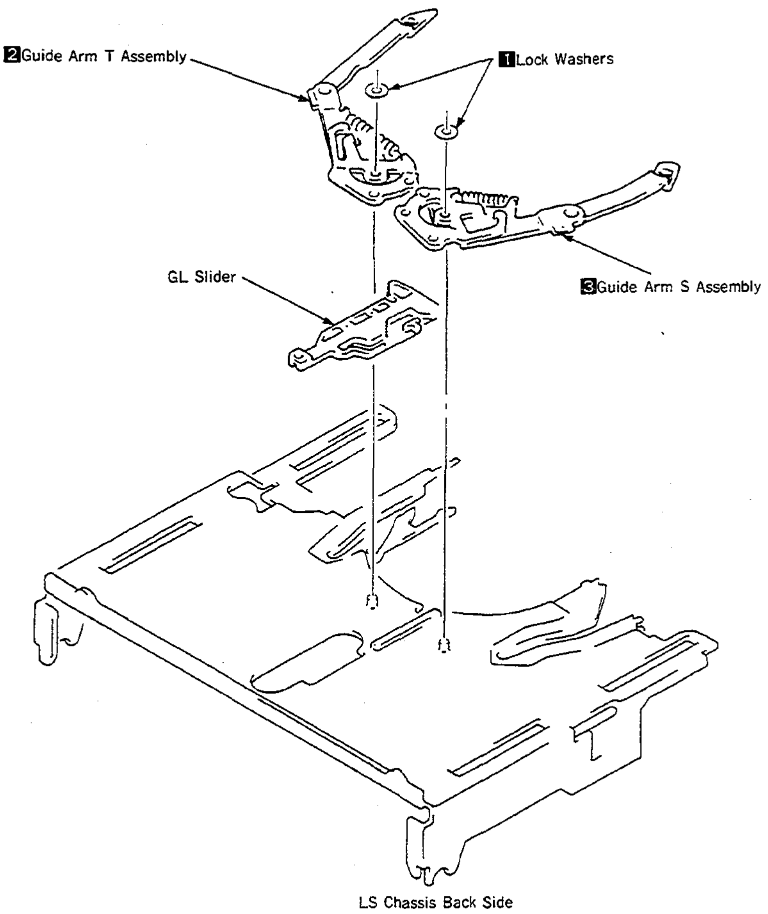


Fig. 17

3-10. SUPPLY REEL TABLE ASSEMBLY AND TG-1 ARM ASSEMBLY (Fig. 18)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Referring to 3-8, remove the guide base S assembly.
6) Remove a screw ❶, then the string ❷ from the supply reel table assembly ❸. For easy removal of string block ❹, insert a flat-blade screwdriver into a groove ⓐ and push it up (Fig. a).
7) Remove the supply reel table assembly ❸.
8) Remove a tension coil spring ❺.
9) Turn the TG-1 arm assembly ❻ up to a portion ⓒ of LS chassis hole in the arrow Ⓐ direction so that its tab ⓑ can be disengaged (Fig. b).

2. Mounting

1) Pushing the S soft brake ❼ toward the arrow Ⓑ, mount thesupply reel table assembly ❸.
2) Route the string ❷ under the TG-1 arm asembly ❻, andinsert the tab ⓑ of TG-1 arm assembly into the LS chassis hole ⓒ, then turn the TG-1 arm assembly in the reverse direction of arow Ⓐ (Fig. b).
3) Wind the string ❷ along the groove of supply reel t assembly ❸ (Fig. a).

Note : Do not curl the string extremely. Also, avoid adhesion oil, otherwise the image will be distorted.

4) Using the FWD B.T. adjusting driver (Ref. No. J-15), shift the string block ❹ toward the arrow Ⓒ and tighten the screw ❶ (Fig. a).
5) Engage the tension coil spring ❺ to the chassis hook.

Note : Confirm that the string ❷ is surely wound around the groove of supply reel table assembly ❸ (Fig.a).

6) Referring to 3-8, mount the guide base S assembly.
7) Referring to 3-7, mount the LS chassis assembly.
8) Referring to 3-2, mount the protector base assembly.
9) Referring to 3-1, mount the Retainer, Gooseneck assembly.

Note : At this time, confirm that the T soft assembly is surely engaged with the T soft arm. (Refer to 3-5 Take-up Reel Table Assembly and Take-up Soft Assembly.)

10) Referring to 1-1, mount the cassette compartment assembly.

Note : Referring to 3-22, adjust the tension regulator position.

Note : Referring to 3-23, adjust the forward back tension.

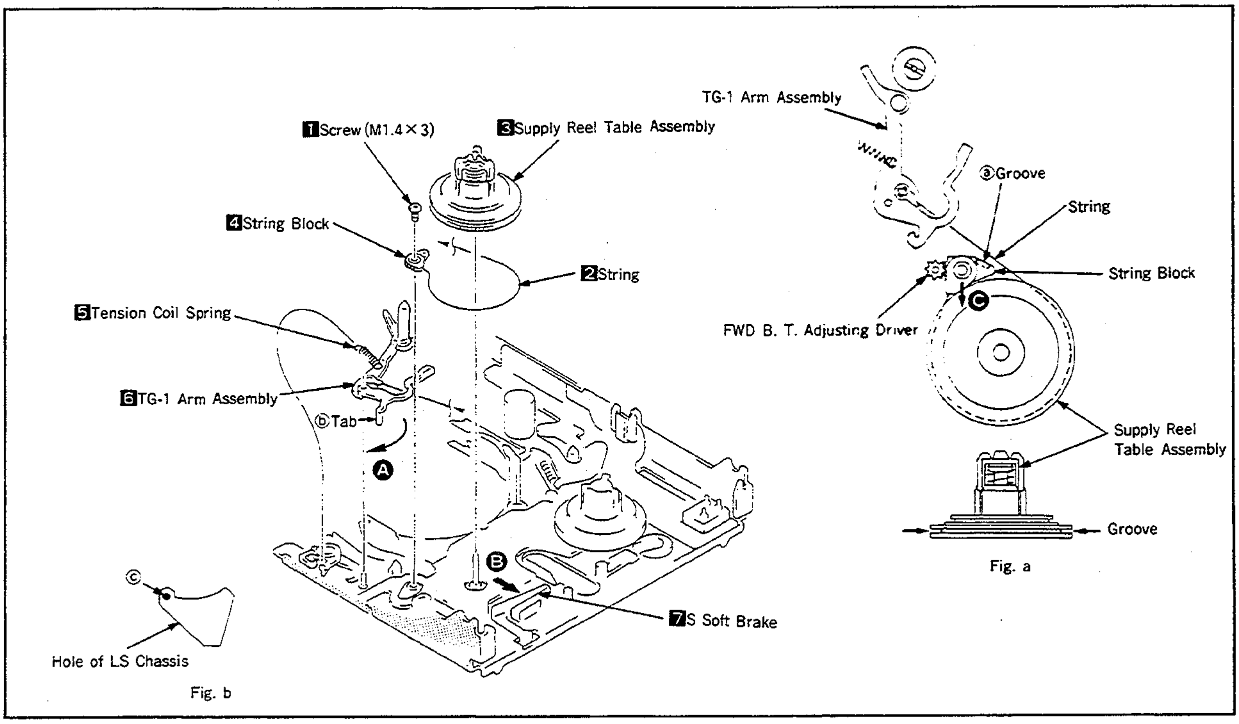

❶Screw (M1.4 × 3)
❸Supply Reel Table Assembly
❹String Block
❷String
❺Tension Coil Spring
❻TG-1 Arm Assembly
ⓑTab
Ⓐ
Ⓑ
❼S Soft Brake
ⓒ
Hole of LS Chassis
Fig. b
TG-1 Arm Assembly
ⓐGroove
String
String Block
Ⓒ
FWD B. T. Adjusting Driver
Supply Reel Table Assembly
Groove
Fig. a

Fig. 18

3. TG-2 ROLLER ASSEMBLY (Fig. 19)

1. Removal

1) Remove the TG-2 roller assembly ❶ .
2) Remove a compression coil spring ❷ .

2.Mounting

1) Insert a compression coil spring ❷ into the boss on chassis.
2) Rotate gently the TG-2 roller assembly ❶ until the screw is engaged.

3. Presetting of TG-2 Roller Height (Fig. a)

1) Rotating the TG-2 upper flange, adjust the height of bottom face of TG-2 lower flange from the top face of dowel on the mechanical chassis to 3. 3 ± 0. 05mm.

Note : After adjustment, perform 4. TAPE PATH ADJUSTMENT.

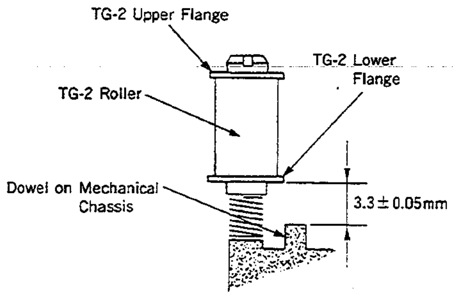

TG-2 Upper Flange
TG-2 Lower Flange
TG-2 Roller
Dowel on Mechanical Chassis
3.3±0.05mm

Fig. a

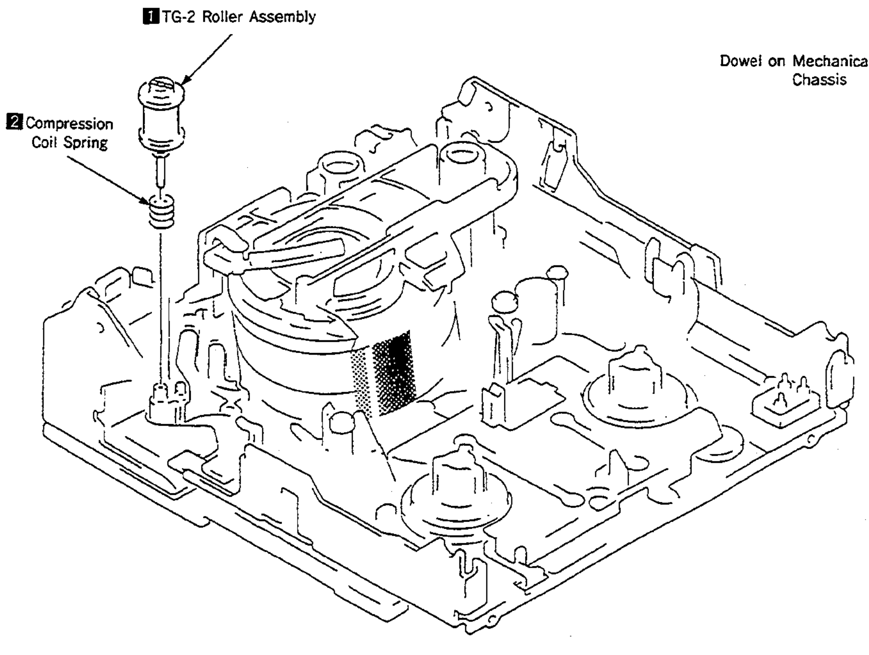

❶ TG-2 Roller Assembly
❷ Compression Coil Spring

Fig. 19

3-12. TG-7 ARM ASSEMBLY (Fig. 20)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Raise a portion ⓐ of TG-7 arm Leaf spring ❶ in arrow direction with a flat-blade screwdriver or tweezers to disengage the tab from the chassis, then remove the TG-7 arm Leaf spring as shown in Fig. a.
6) Remove the TG-7 assembly ❷ from the shaft of mechanical-chassis.

2. Mounting

1) Mount the TG-7 arm assembly ❷ to the shaft of mechanic chassis.
2) Mount the TG-7 arm Leaf spring ❶ to the mechanicalchassis.
   *Push in the tab of Leaf spring until it clicks into a detent ofchassis (Fig. a).
3) Referring to 3-7, mount the LS chassis assembly.
4) Referring to 3-2, mount the protector base assembly.
5) Referring to 3-1, mount the Retainer, Gooseneck assembly.
6) Referring to 1-1, mount the cassette compartmnet assembly.

Note : After mounting, perform 4. TAPE PATH ADJUSTMENT.

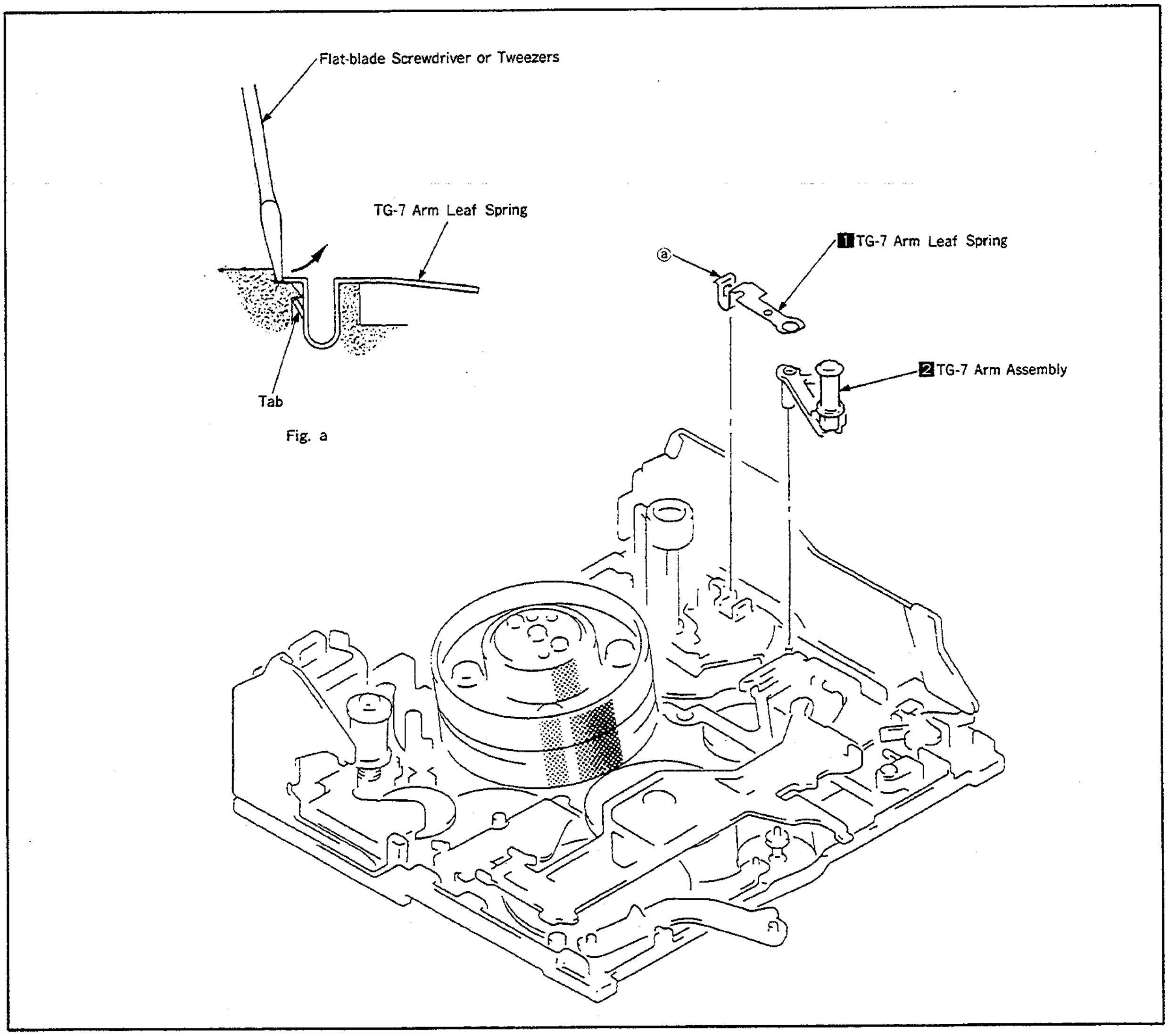


Fig. a

Fig. 20

3 . LM MOTOR ASSEMBLY (Fig. 21)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Select the LOAD mode (at the position where the FF arm assembly is not above the screw ❶).
6) Remove two screws ❶, then the LM motor assembly ❷.

2. Mounting

1) Aligning the dowel ⓐ of LM motor assembly ❷ with the hole ⓑ of mechanical chassis, mount the LM motor assembly with its hole ⓒ inserted into the mechanical chassis shaft ⓓ.
2) Tighten two screws ❶.
3) Referring to 3-7, mount the LS chassis assembly.
4) Referring to 3-2, mount the protector base assembly.
5) Referring to 3-1, mount the Retainer, Gooseneck assembly.
6) Referring to 1-1, mount the cassette compartment assembly.

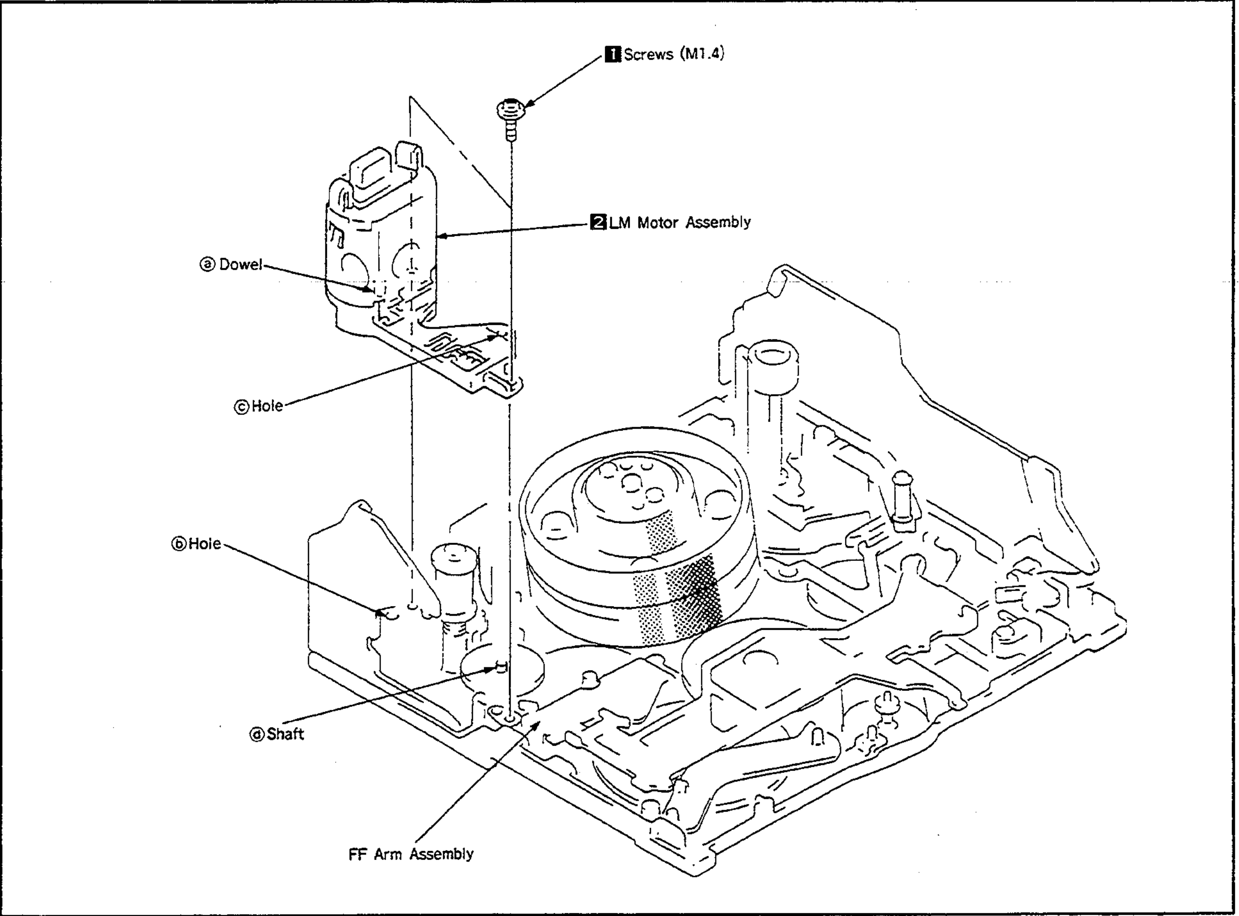


Fig. 21

3-14. LS ARM (Fig. 22)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the proctector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Remove the LS arm **1** from the shaft of mechanical chassis.

Note : Take care not to drop the LS roller **2**.

2. Mounting

1) Mount the LS arm **1** meeting with mechanical chassis sh and cam groove.

Note : Move the LS arm **1** in arrow direction to confirm that the LS roller **2** is surely inserted.

2) Referring to 3-7, mount the LS chassis assembly.
3) Referring to 3-2, mount the protector base assembly.
4) Referring to 3-1, mount the Retainer, Gooseneck assembly.
5) Referring to 1-1, mount the cassette compartment assembly.

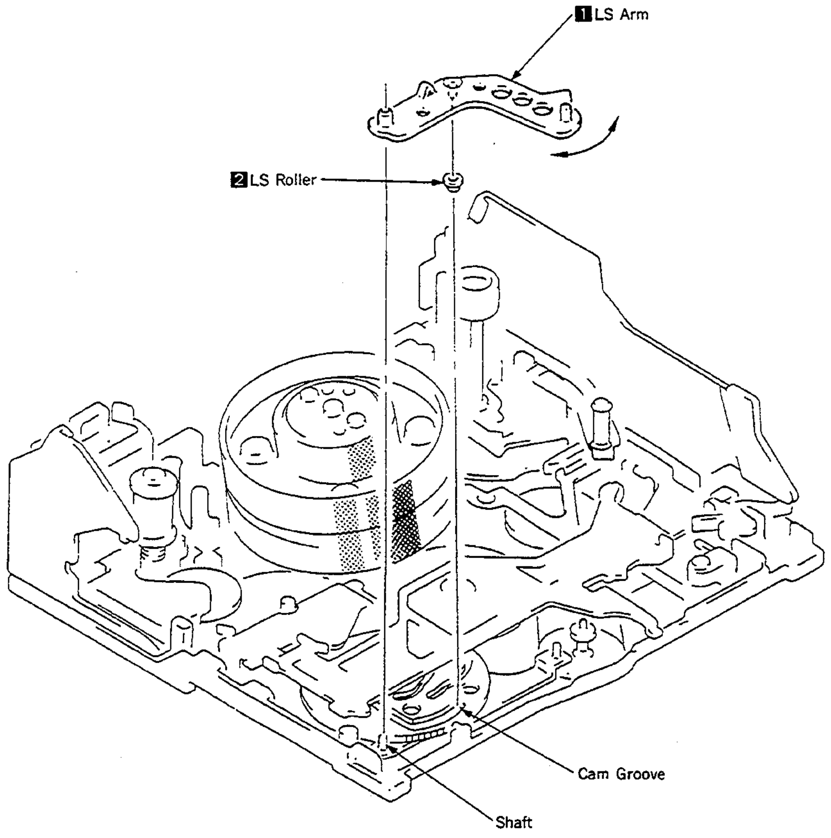


Fig. 22

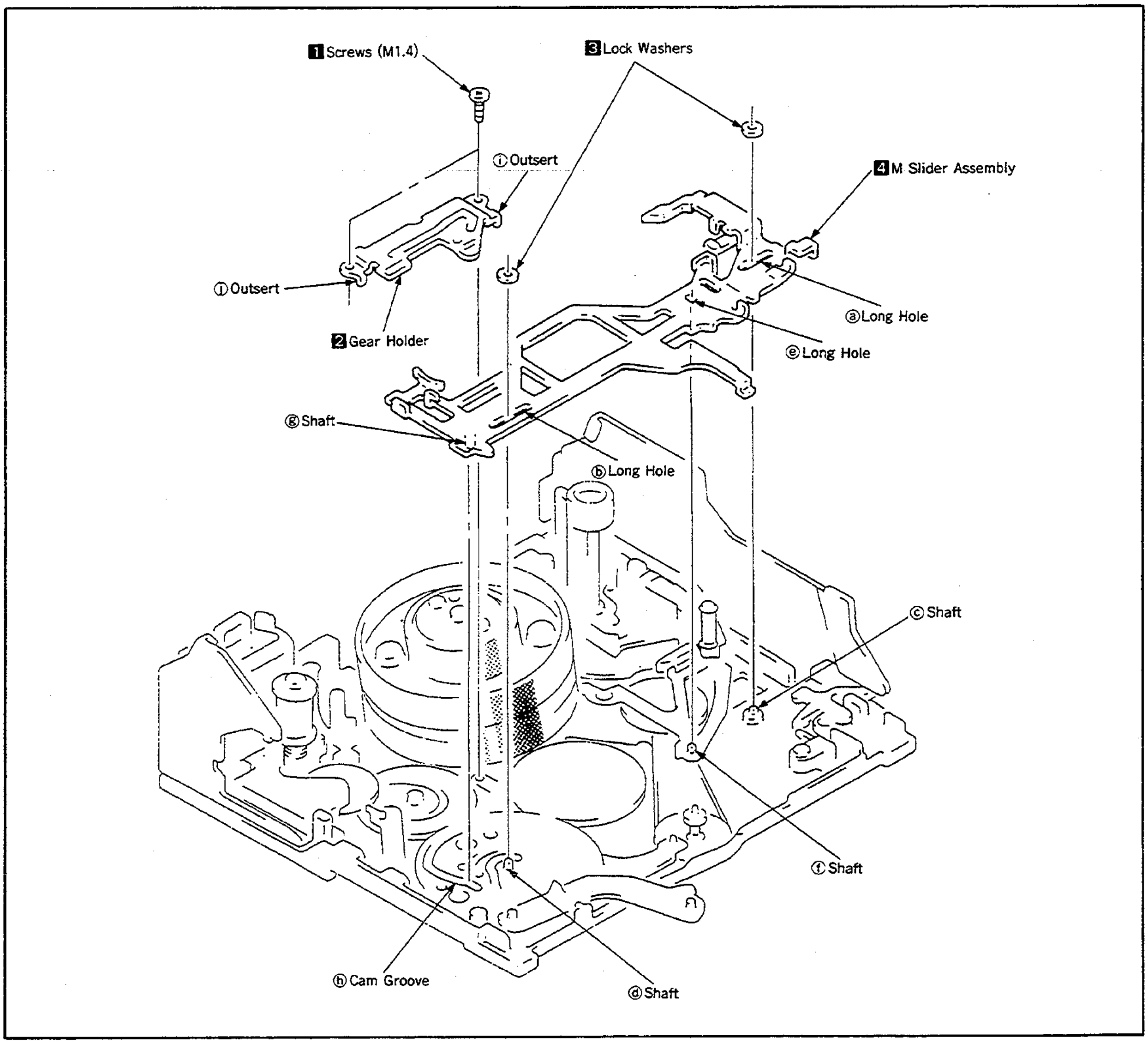
. M SLIDER ASSEMBLY (Fig. 23)

Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Remove two screws ❶, then the gear holder ❷.
6) Remove two lock washers ❸, then the M slider assembly ❹.

2. Mounting

1) Mount the M slider assembly ❹, aligning long holes ⓐ and ⓑ of M slider assembly with shafts ⓒ and ⓓ of mechanical chassis, and a long hole ⓔ with shaft ⓕ of press arm assembly, and also shaft ⓖ with outer groove ⓗ of cam respectively.
2) Mount two lock washers ❸.
3) Mount the gear holder ❷ with its outserts ⓘ and ⓙ inserted into holes in the mechanical chassis.
4) Tighten two screws ❶.
5) Referring to 3-7, mount the LS chassis assembly.
6) Referring to 3-2, mount the protector base assembly.
7) Referring to 3-1, mount the Retainer, Gooseneck assembly.
8) Referring to 1-1, mount the cassette compartment assembly.



❶Screws (M1.4)
❸Lock Washers
ⓘOutsert
❹M Slider Assembly
ⓙOutsert
ⓐLong Hole
❷Gear Holder
ⓔLong Hole
ⓖShaft
ⓑLong Hole
ⓒShaft
ⓕShaft
ⓗCam Groove
ⓓShaft

Fig. 23

3-16. PINCH PRESS ARM ASSEMBLY (Fig. 24)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-3, remove the drum assembly.
5) Referring to 3-7, remove the LS chassis assemvly.
6) Referring to 3-15, remove the M slider assembly.
7) Remove a lock washer **1**, then pinch press arm assembly **2**.

2.Mounting

1) Mount the pinch press arm assembly **2**, inserting its sh ⓐ into the cam groove ⓑ of HC drive arm, and hole ⓒ in the shaft ⓓ of mechanical chassis.
2) Mount the lock washer **1**.
3) After mounting, shift the pinch press arm assembly toward the arrow direction.
4) Referring to 3-15, mount the M slider assembly.
5) Referring to 3-7, mount the LS chassis assembly.
6) Referring to 3-3, mount the drum assembly.
7) Referring to 3-2, mount the protector base assembly.
8) Referring to 3-1, mount the Retainer, Gooseneck assembly.
9) Referring to 1-1, mount the cassette compartment assembly.

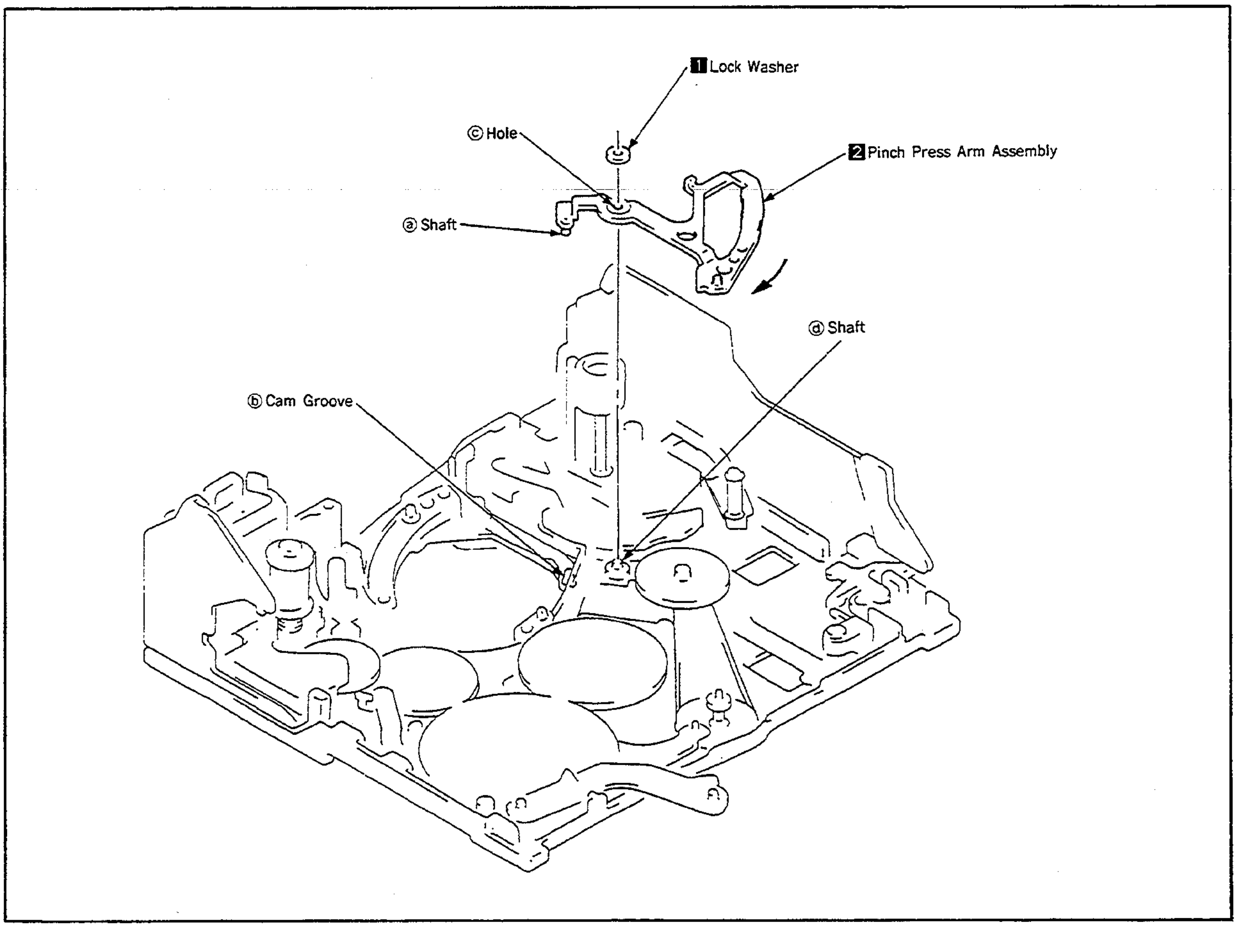


Fig. 24

. CAM (Fig. 25)

emoval

Referring to 1-1, remove the cassette compartment assembly.
Referring to 3-1, remove the Retainer, Gooseneck assembly.
Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Referring to 3-14, remove the LS arm assembly.
6) Referring to 3-15, remove the M slider assembly.
7) Remove the cam ■.

2. Mounting

1) Referring to 3-13, remove the LM motor assembly.

Note : Take care not to allow grease of LM motor assembly to stick to the TG-2 roller assembly.

2) Mount the cam ■, aligning its center hole with shaft of mechanical chassis, and the cam groove with the shaft of GL arm assembly. At this time , make sure that the ▲ mark on L gear B is aligned with that on the cam and also a recess is aligned with the phase aligning hole respectively as shown in Fig. a.

Note : Apply grease to the cam groove if it scarecely remains.

3) Mount the LM motor assembly.
4) Referring to 3-15, mount the M slider assembly.
5) Referring to 3-14, mount the LS arm assembly.
6) Referring to 3-7, mount the LS chassis assembly.
7) Referring to 3-2, mount the protector base assembly.
8) Referring to 3-1, mount the Retainer, Gooseneck assembly.
9) Referring to 1-1, mount the cassette compartment assembly.

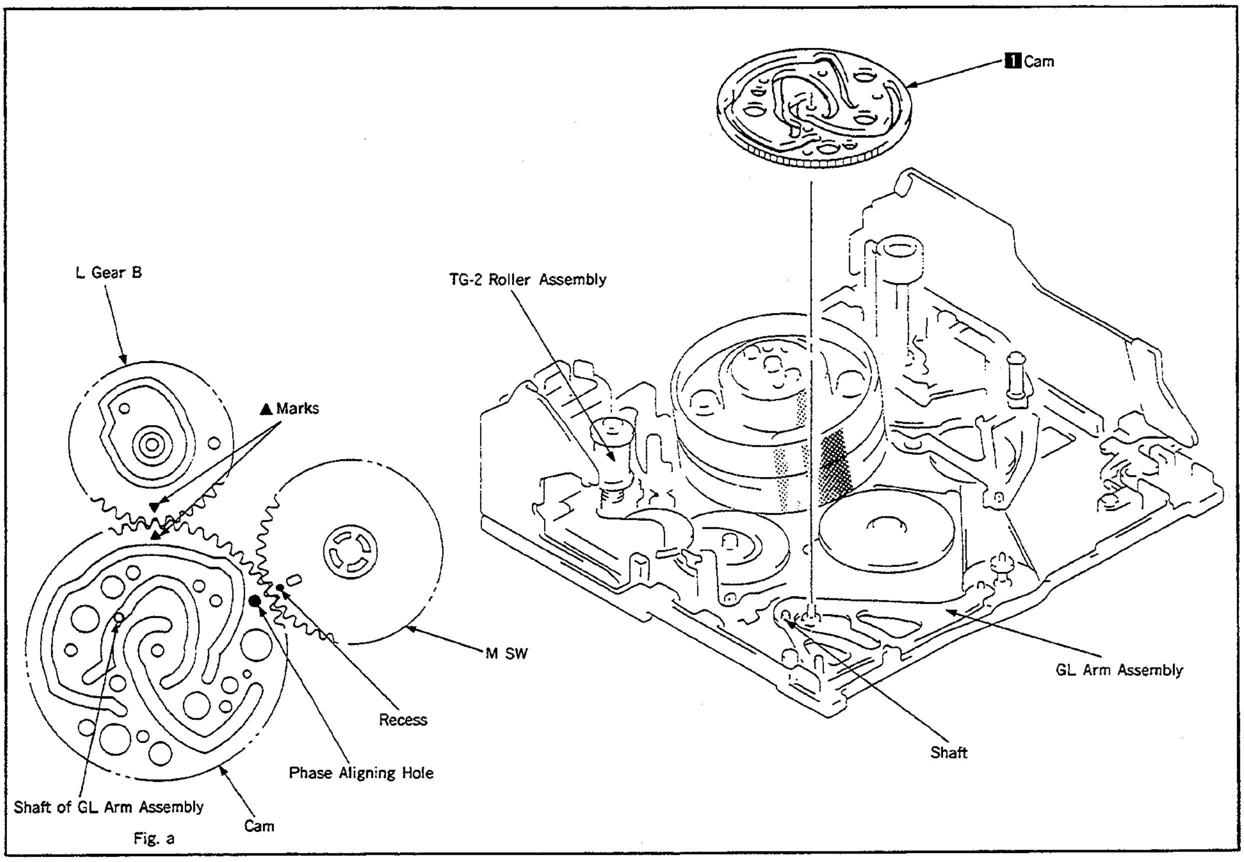


Fig. 25

3-18. GL ARM ASSEMBLY (Fig. 26)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Referring to 3-14, remove the LS arm assembly.
6) Referring to 3-15, remove the M slider assembly.
7) Referring to 3-17, remove the cam.
8) Remove the GL arm assembly **1**.

2. Mounting

1) Mount the GL arm assembly **1** with its hole ⓐ inserted in the shaft ⓑ of mechanical chassis.
2) Referring to 3-17, mount the cam.
3) Referring to 3-15, mount the M slider assembly.
4) Referring to 3-14, mount the LS arm assembly.
5) Referring to 3-7, mount the LS chassis assembly.
6) Referring to 3-2, mount the protector base assembly.
7) Referring to 3-1, mount the Retainer, Gooseneck assembly.
8) Referring to 1-1, mount the cassette compartment assembly.

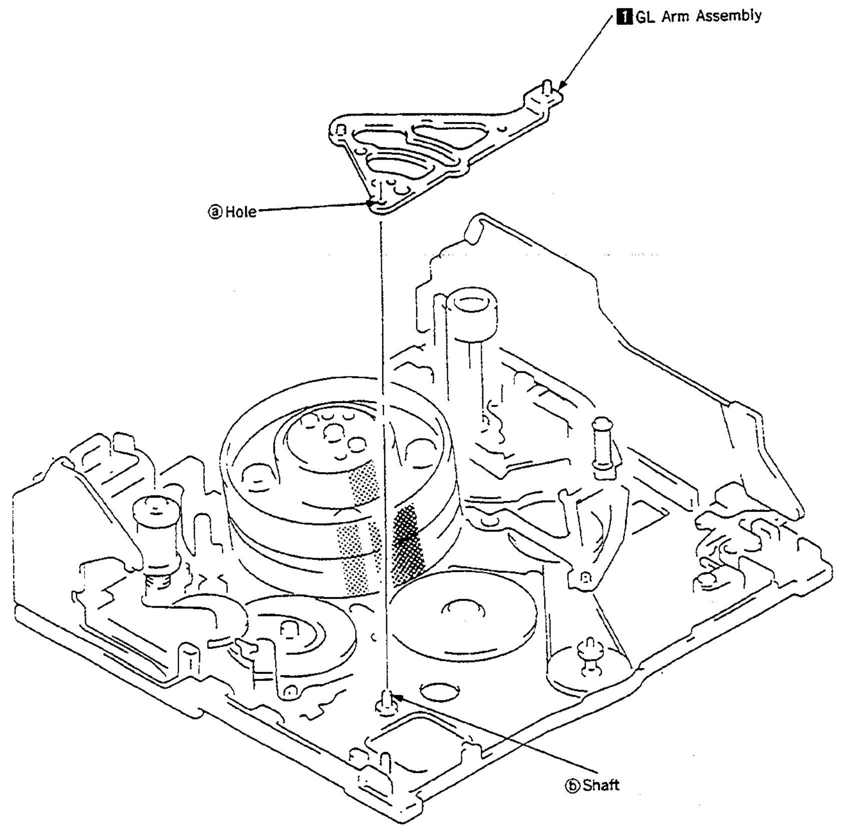


Fig. 26

9. L GEAR A AND L GEAR B (Fig. 27)

Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-7, remove the LS chassis assembly.
5) Referring to 3-14, remove the LS arm assembly.
6) Referring to 3-15, remove the M slider assembly.
7) Referring to 3-17, remove the cam.
8) Referring to 3-13, remove the LM motor assembly.
9) Remove the FF arm assembly ❶.
10) Remove the L gear A ❷.
11) Remove the L gear B ❸.

2. Mounting

1) Insert the L gear B ❸ into the shaft of mechanical chassis. (At this time, the phase aligning mark ▲ should be faced toward the cam mounting shaft ⓐ.)
2) Insert the L gear A ❷ into the shaft of mechanical chassis.
3) Mount the FF arm assembly ❶ with its two shafts inserted into the cam groove of L gear B ❸ and the hole of mechanical chassis.
4) Referring to 3-17, mount the cam.
5) Referring to 3-13, mount the LM motor assembly.
6) Referring to 3-15, mount the M sleder assembly.
7) Referring to 3-14, mount the LS arm assembly.
8) Referring to 3-7, mount the LS chassis assembly.
9) Referring to 3-2, mount the protector base assembly.
10) Referring to 3-1, mount the Retainer, Gooseneck assembly.
11) Referring to 1-1, mount the cassette compartment assembly.

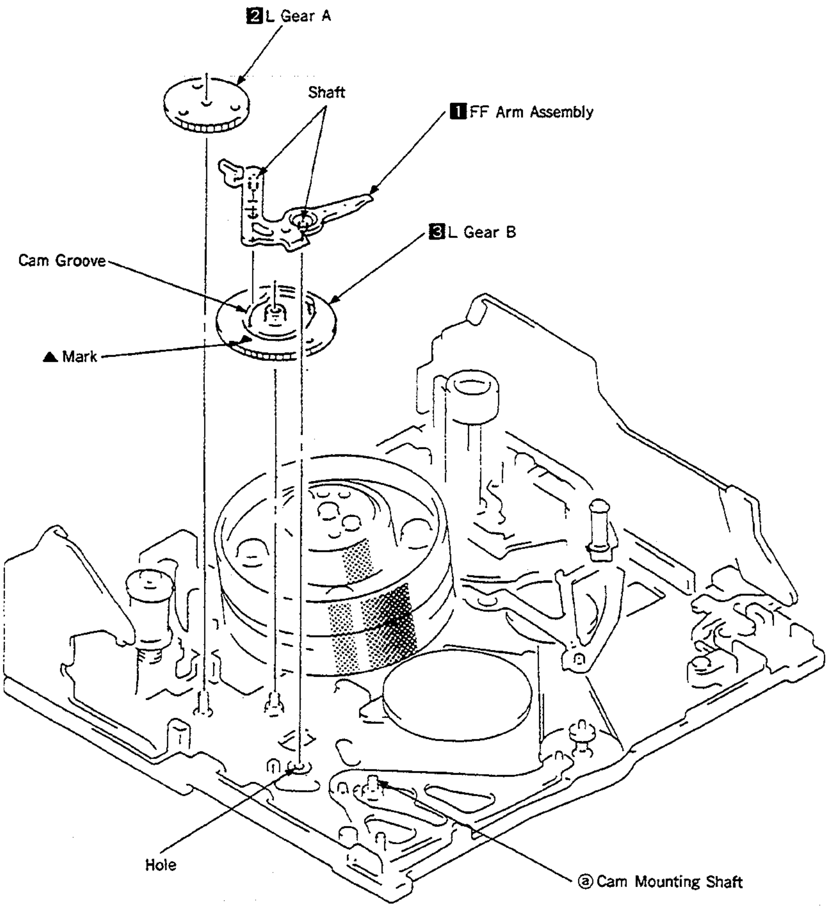


Fig. 27

3-20. RELAY PULLEY AND CHANGE GEAR ASSEMBLY (Fig. 28)

1. Removal

1) Referring to 1-1, remove the cassette compartment assembly.
2) Referring to 3-1, remove the Retainer, Gooseneck assembly.
3) Referring to 3-2, remove the protector base assembly.
4) Referring to 3-3, remove the drum assembly.
5) Referring to 3-7, remove the LS chassis assembly.
6) Referring to 3-14, remove the LS arm assembly.
7) Referring to 3-15, remove the M slider assembly.
8) Referring to 3-17, remove the cam.
9) Referring to 3-18, remove the GL arm assembly.
10) Referring to 3-16, remove the pinch press arm assembly.
11)Remove a lock washer 1, then remove together the Change gear assembly 2, relay belt 3 and relay pulley 4.

2. Mounting

*Give one or two drips of oil to the conversion gear shaft and relay pulley shaft respectively. (Oiling range is under the neck as shown in Fig. a.)

1) Hooking the relay belt 3 to the relay pulley 4 and Change gear assembly 2, mount respective parts.
   * At first, insert the relay pulley into the mechanical chassis-shaft, then the change gear assembly by engaging with the capstan motor gear.

Note : Take care not to damage the Change gear by the capstan motor gear.

2) Mount a lock washer 1.
3) Referring to 3-16, mount the pinch press arm assembly.
4) Referring to 3-18, mount the GL arm asembly.
5) Referring to 3-17, mount the cam.
6) Referring to 3-15, mount the M slider assembly.
7) Referring to 3-14, mount the LS arm assembly.
8) Referring to 3-7, mount the LS chassis assembly.
9) Referring to 3-3, mount the drum assembly.
10) Referring to 3-2, mount the protector base assembly.
11) Referring to 3-1, mount the Retainer, Gooseneck assembly.
12) Referring to 1-1, mount the cassette compartment assembly.

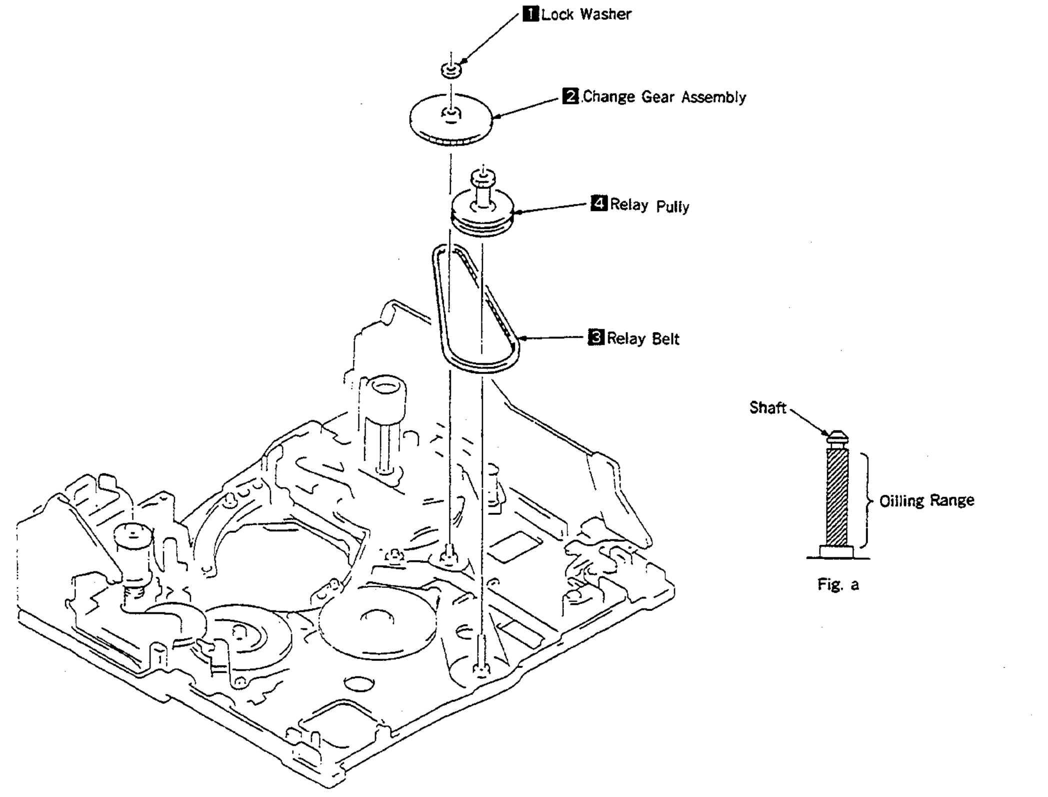


Fig. 28

3-21. ROTARY UPPER DRUM REPLACEMENT

1. Removoal

- If possible, make a recording before removal.

1) Remove the two screws **1** (Fig. 29).
2) Mount the jig **2** (Ref. No. J-10) with the two supplied screws **3**, then screw the attached hexagon socket screws **4** to the jig **2**. The rotary upper drum **5** will move upward and come off (Fig. 30).

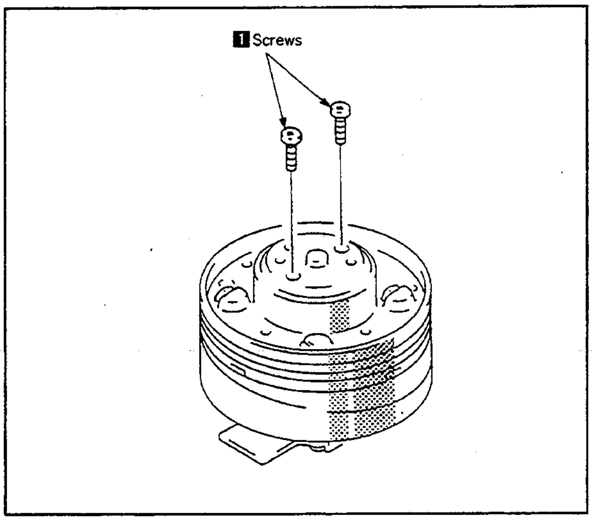


Fig. 29

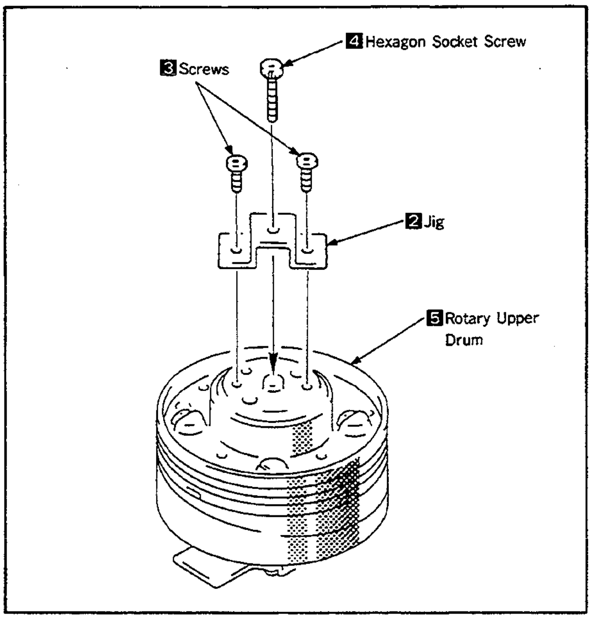


Fig. 30

2. Installation

1) Wipe clean the flange surface and the rotary upper drum **5** surface that makes contact with it, and confirm that they are free from dirt and scratches.
2) Insert the jig **6** (Ref. No. J-10) into the drum positioining hole, then set then set the rotary upper drum **5** by passing the jig through its positioning hole **7**. (Fig.31)
3) Remove the jig **6** and push down the rotary upper drum **5** gently by hand. If it does not go all the way down, secure it temporarily by tightening the two screws **1** alternately (Fig.29).
4) Insert the jig **6** into the positioning hole **7** again and confirm that it goes in smoothly. If it does not, loosen the two screws **1**, repeat step 2) of the Removal paragraph and restart the setting procedure.
5) Tighten the screws **1**.

Note : After installing, be sure to perform tape path adjustment as described in section 4.

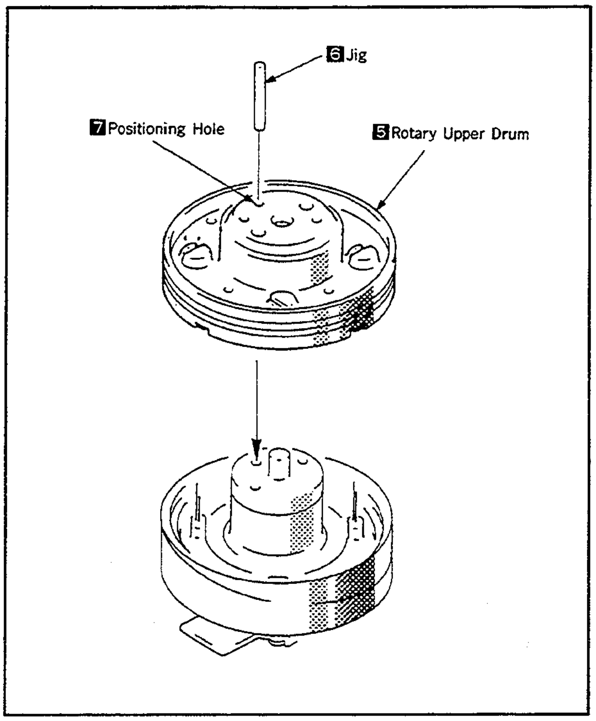


Fig. 31

3-22. ADJUSTMENT OF TENSION REGULATOR POSITION (Fig. 32)

1. Adjustment

1) Set a cassett tape and run the tape in the PB mode.
2) With the tape running, check that the distance from No.1 guide to No. 2 guide upper flange is 4.2 mm.
3) If they are not at the specified positions, perform adjustment in step 4) and subsequent steps.
4) Loosen the screw ❶.
5) If No.1 guide is located inside the specified position, shift the string block toward the arrow Ⓐ using the FWD B.T. adjusting driver (Ref No. J-15). Or, if it is located outside, shift toward the arrow Ⓑ.
6) Tighten the screw ❶.

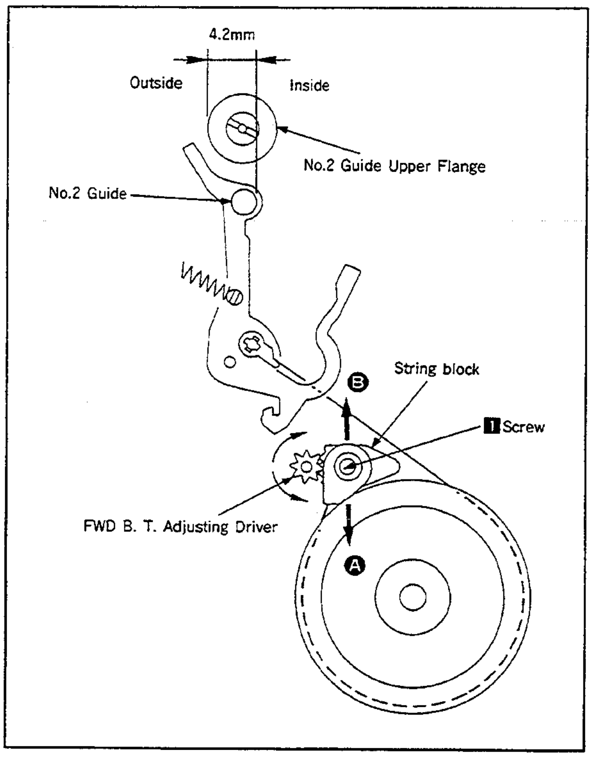

4.2mm
Outside
Inside
No.2 Guide Upper Flange
No.2 Guide
String block
Ⓑ
❶ Screw
FWD B. T. Adjusting Driver
Ⓐ

Fig. 32

3-23. FWD BACK TENSION ADJUSTMENT (Fig.33)

1) Select the TEST mode 1 using the adjusting remote controller (Ref No. J-17).
2) Set the torque cassette (Ref No.J-10).
3) Select the FWD mode, and check that the torque of S reel table is 8.5 ~ 11.5 g · cm.
   If it is out of standard, adjust the TG-1 spring hook position using the FWD B.T. adjusting driver (Ref No. J-15).

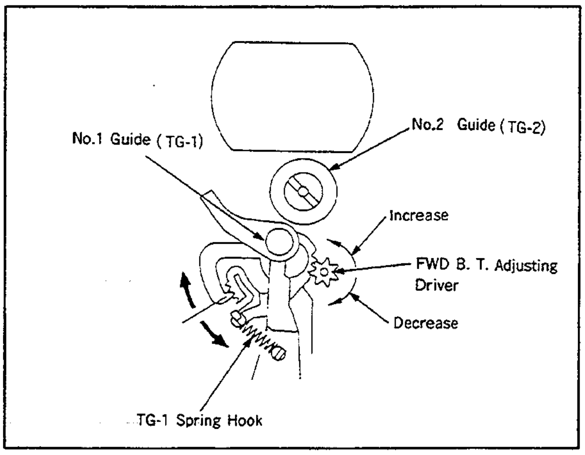

No.1 Guide (TG-1)
No.2 Guide (TG-2)
Increase
FWD B. T. Adjusting Driver
Decrease
TG-1 Spring Hook

Fig. 33

3-24. REEL TORQUE CHECK

1) Set the torque cassette.
2) Select the FWD mode, and check that the torque fluctuation center of T reel table is 7 ~ 17 g · cm
3) Select the REV mode, and check that the torque fluctuation center of S reel table is 25 ~ 39 g · cm.
4) Select the REV mode, and check that the torque of T reel table is 7 ~ 17 g · cm.
5) If the above data is not satisfied, the tension regulator band, T hard tab or T soft assembly will be faulty. Check them first, and if no abnormality is found, replace respective reel tables.

4. TAPE PATH ADJUSTMENT

The 8mm video system uses ATF (Automatic Track Finding) which instantaneously controls a tape running speed based on 4 types of pilot signals and performs high-precision tracking.
This does away a tracking control knob and allows accurate track tracing.
On the other hand, however, the ATF system has a problem in adjusting the tape path system. That is, if head tracing is out of order a little, the ATF automatically corrects it, which means *that perfect adjustment cannot be done.*
Therefore, in the A mechanism, the ATF system is forcibly operated to shift a tracking amount constantly (approx. 1/4) by setting the PATH mode with the adjusting remote controller (Ref No.J-16). So, fine tracking adjustment can be easily done. Also, the PATH mode setting varies with the model, and therefore, refer to the Service Manual.

Example) For CCD-FX410 series
Set the adjusting remote controller to the HOLD ON side.

1) Set PAGE : 1, ADDRESS : 00, DATA : 01 to cancel the PROTECT mode.
2) Set PAGE : D, ADDRESS : 01, DATA : 03 to select the PATH mode.

Note : Setting of PATH mode = TRACK SHIFT mode
If the adjusting remote controller (Ref No.J-16) is set to HOLD OFF once, then set to HOLD ON again after mode setting, the display of ADDRESS and DATA changes.

3) After adjustment is over, set DATA : 00, and press the PAUSE buttom on the adjusting remote controller (Ref No. J-16).

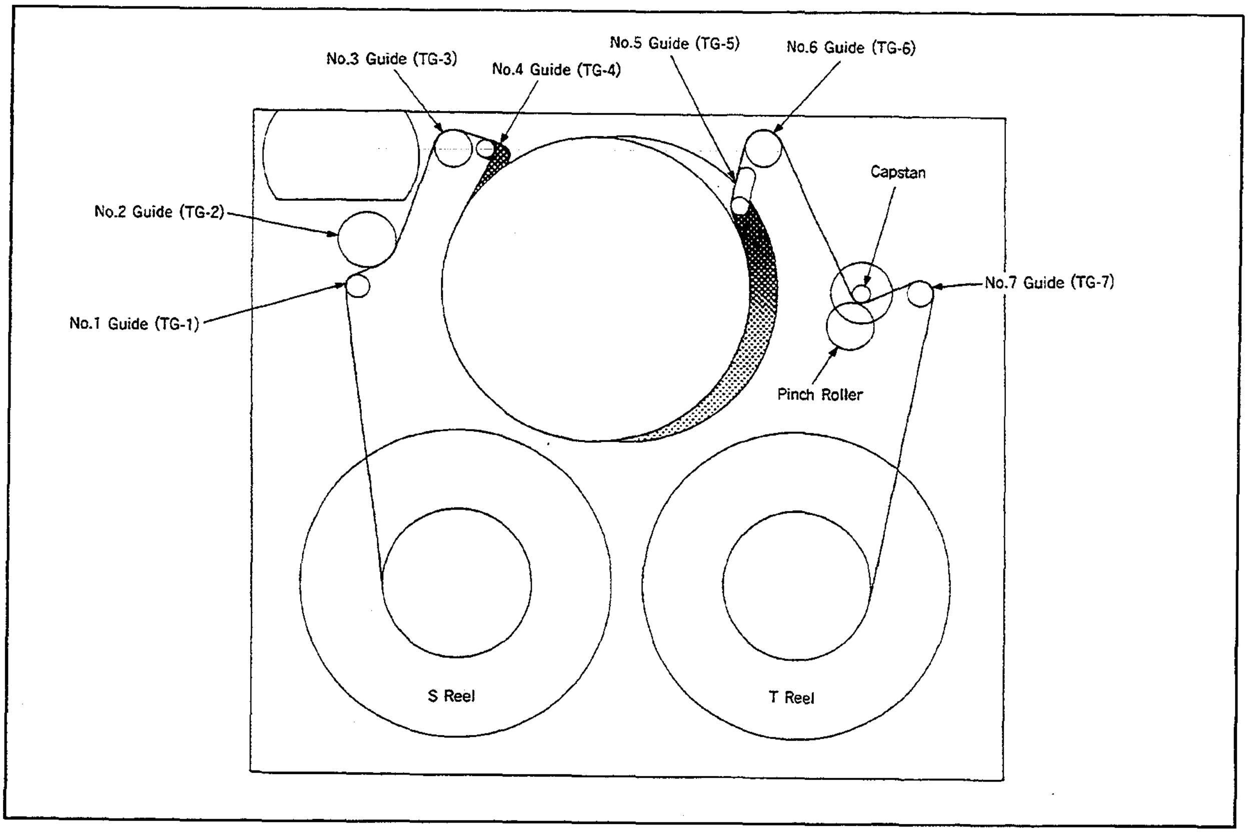


Fig. 34-A

[Note on Adjustment of No.7 Guide (TG-7)]
The height adjustment screw for No.7 guide (TG-7) is located at some distance from the guide (refer to Fig.41).
Therefore, when performing section 4-4. No.7 Guide (TG-7) Adjustment it is convenient to use the alignment tape for tracking (Ref. No. J-6), modified as follows, and perform adjustment in playback mode.

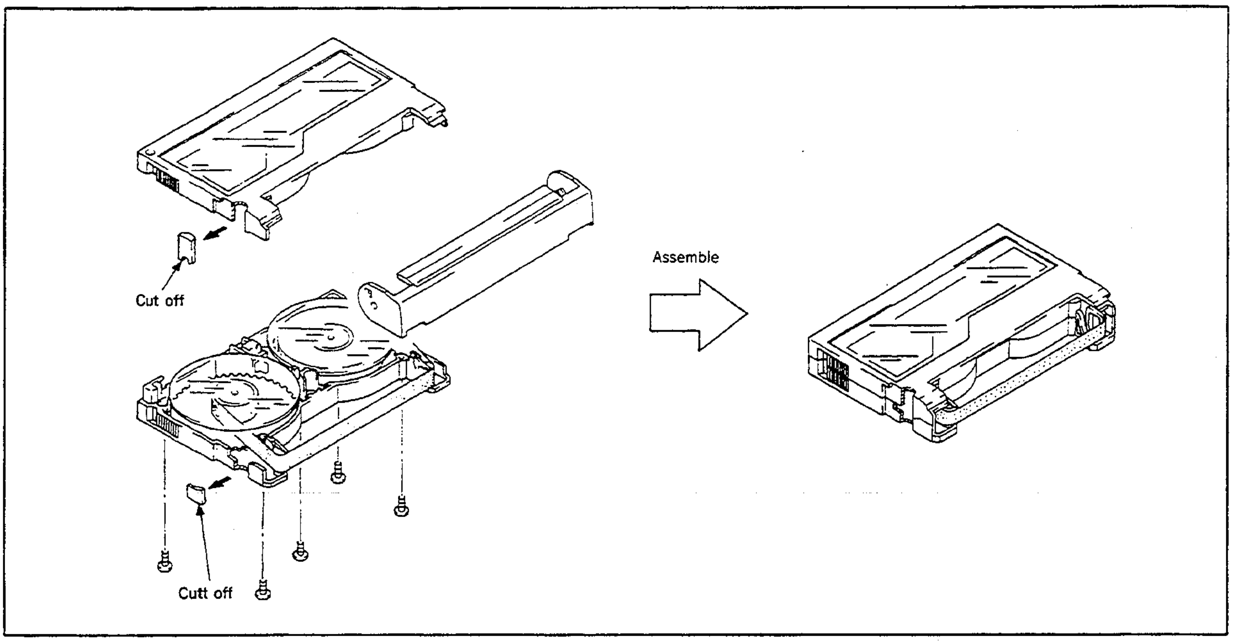


Fig. 34-B

4-1. PREPARATION FOR ADJUSTMENT

1) Clean the tape running surface (tape guides, drum, capstan shaft, pinch roller) (Fig. 34-A).
2) Set the PATH mode using the adjusting remote controller.
3) connect an oscilloscope to the check pin connector of the set.
   Example) For CCD-FX410 series
   CH1 : CN001 pin ③ (PB RF OUT) on CS-31 board
   CH2 : CN001 pin ④ (RF SWP) on CS-31 board
4) Play back a tracking alignment tape (NTSC : WR5-1N, or PAL : WR5-1C).
5) Check that a RF waveform is flat at the inlet and outlet of the oscilloscope (Fig. 35 ⓐ).
   If not flat, make adjustment with the procedures below.
   When the RF waveform is not flat at the inlet/outlet ; See Fig. 35 ⓑ and ⓒ.

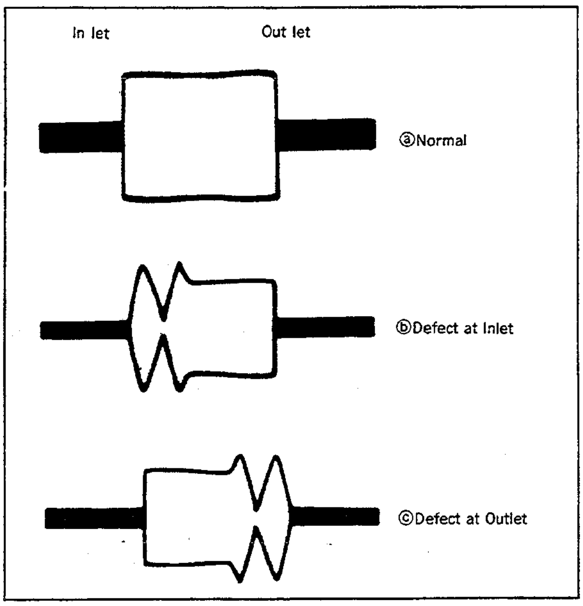


Fig. 35

4-2. TRACKING ADJUSTMENT (Fig. 36, 37)

1) Play back the tracking alignment tape.
2) Loosen the No.3 guide (TG-3) lock screw ❶ and turn the No.3 guide to flatten the waveform at the inlet.
3) Tighten the No.3 guide (TG-3) lock screw ❶ to lock the No.3 guide.
4) Loosen the No.6 guide (TG-6) lock screw ❷ and turn the No.6 guide to flatten the waveform at the outlet.
5) Tighten the No.6 guide (TG-6) lock screw ❷ to lock the No.6 guide. When this is done, make sure that the waveform does not change at the outlet.

Note : Be careful not to loosen the lock screw too much because the guide is easily moved.
: Take care not to allow interference between No.6 guide and drum when tightening the No.6 guide lock screw.

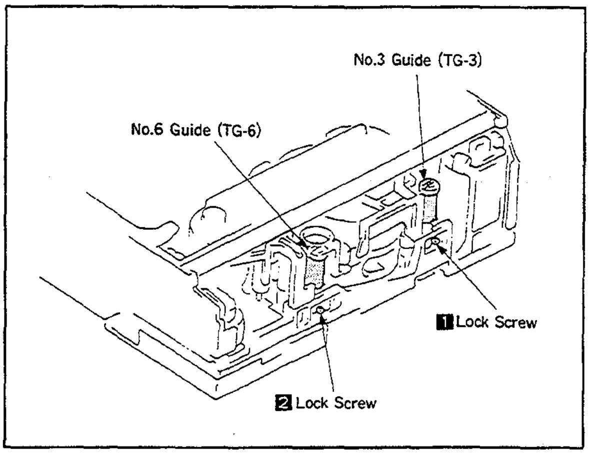


Fig. 36

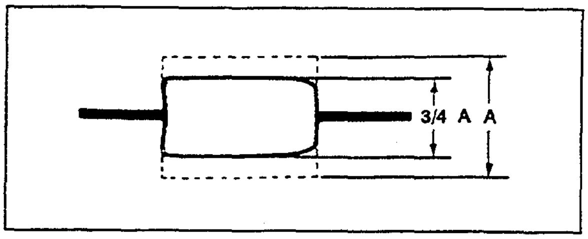


Fig. 37

4-3. No.2 GUIDE (TG-2) ADJUSTMENT

When the No.2 guide has been turned or replaced, perform height presetting before this adjustment.

4-3-1. No. 2 GUIDE (TG-2) HEIGHT PRESETTING (Fig. 38)

1) Rotating the TG-2 upper flange, adjust the height of bottom face of TG-2 lower flange from the top face of dowel on the mechanical chassis to 3.3 ± 0.05 mm.

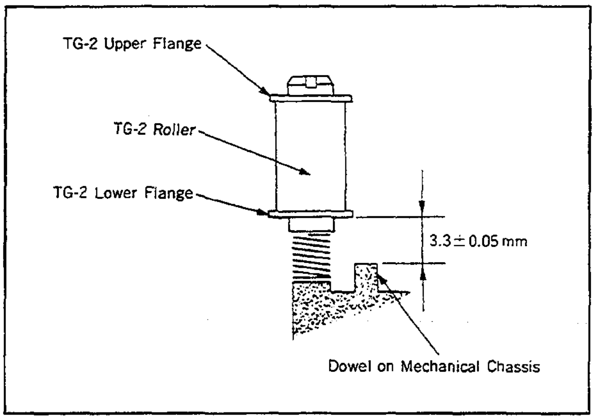


Fig. 38

[Reference]
This A mechanism is equipped with four adjustable guides (TG-2, 3, 6 and 7). To raise or lower the respective guide rotate the corresponding adjustment screw as shown below.

Guide	Guide adjustment	Rotating direction of adjustment screw
TG-2, 3, 6	Raise	Counterclockwise
	Lower	Clockwise
TG-7	Raise	Clockwise
	Lower	Counterclockwise

4-3-2. No. 2 GUIDE (TG-2) ADJUSTMENT (Fig. 39, 40)

1) Play back a thin tape like the P6-120MP, etc. and set the REV mode.
2) Confirm that the tape is not bent at the lower flange 2 of the No.2 guide (TG-2) 1 (Fig. 39). If it is, turn the upper flange 3 of the No.2 guide (TG-2) clockwise with a screwdriver, lowering it until the tape is straightened.
3) Play back the alignment tape for tracking adjustment.
4) Perform tracking adjustment and trcking fine adjustment as described in sections 4-2.
5) In the track shift mode, CUE/REV the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds.
6) If the waveform is not normal (Fig. 40), turn the upper flange 3 of the No. 2 guide (TG-2) 1 90° counterclockwise and repeat step 5.

   Repeat steps 5) and 6) until a normal waveform is obtained.
   Then, confirm that the tracking waveform has not changed.
   If it has, perform fine adjustment of entrance side tracking and repeat step 5).

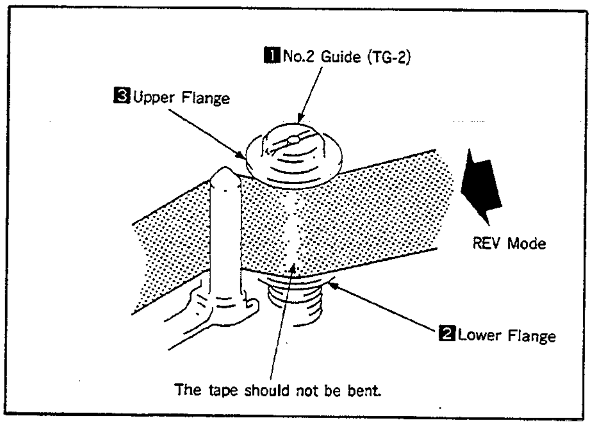


Fig. 39

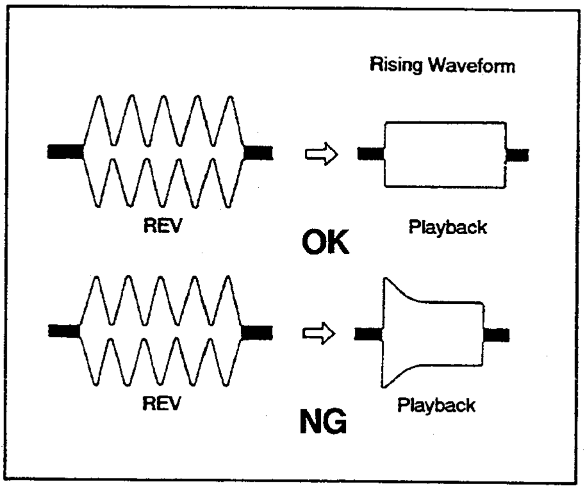


Fig. 40

4-4. No.7 GUIDE (TG-7) ADJUSTMENT (Fig. 41)

Note : This adjustment requires the No. 7 guide adjusting cassetetape (Fig. 34-B).

1) Play back the No.7 guide adjusting cassetetape and set the REV mode.
2) Confirm that the tape is not bent between the No.6 guide (TG-6) 1 and the capstan 2. If it is, turn the hight adjusting screw 4 of the No.7 guide (TG-7) 3 until the tape is straightened.
3) Set the playback mode again and confirm that the tape is not bent between the capstan 2 and the hight adjusting screw 4 of the No.7 guide (specification : 0.5mm or less). If the tape is bent beyond the specification, turn the No.7 guide (TG-7) 3 until bending is within the specification (0.5mm).

   If in the REV mode tape bending between the No. 6 guide (TG-6) 1 and the capstan 2 is 0.3mm or less, adjustment can be considered completed.

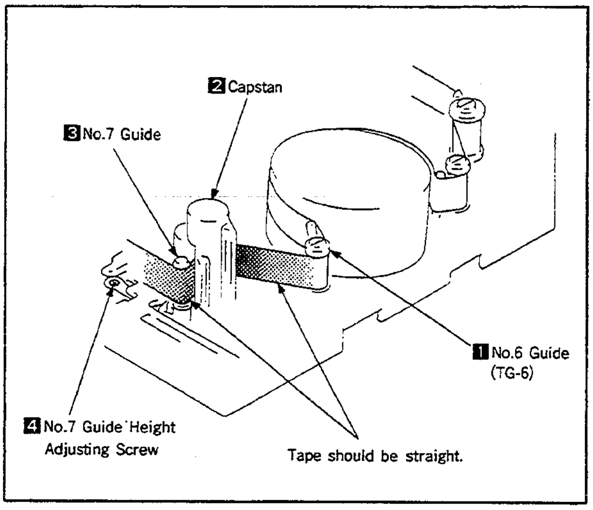


Fig. 41

4-5. CUE AND REV WAVEFORM CHECK (Fig. 42)

1) Play back the alignment tape for tracking adjustment and set the REV mode. Confirm that waveform peaks maintain a constant pitch of 5 seconds or more (Fig. 42). In case pitch is not constant, perform section 4-2.Tracking Fine Adjustment and section 4-4. No.7 Guide Adjustment.
2) Set the CUE mode. Confirm that waveform peaks still maintain a constant pitch of 5 seconds or more (Fig. 42).

   Otherwise, perform section 4-2 Tracking Fine Adjustment.

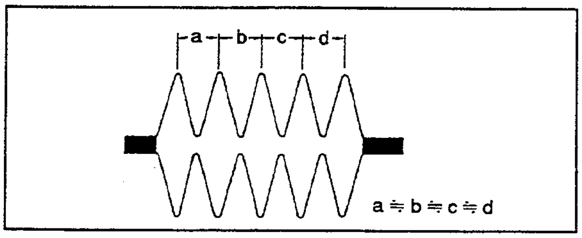


Fig. 42

4-6. CHECK AFTER ADJUSTMENT

4-6-1. TRACKING CHECK

1) Confirm that the amplitude of RF waveform is reduced to approx. 3/4 when the track shift mode is set (Fig. 43).
2) Then, confirm that the minimum amplitude value (EMIN) is 65 % of the maximum value (EMAX) or larger (Fig. 44).
3) Confirm that no large fluctuations occur on the waveform (Fig. 45).

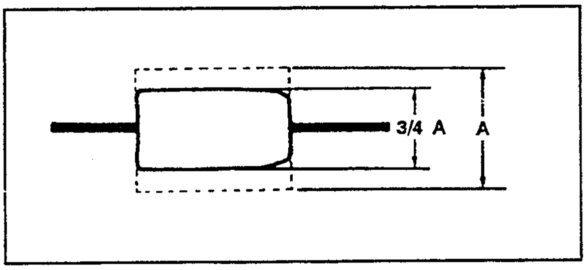
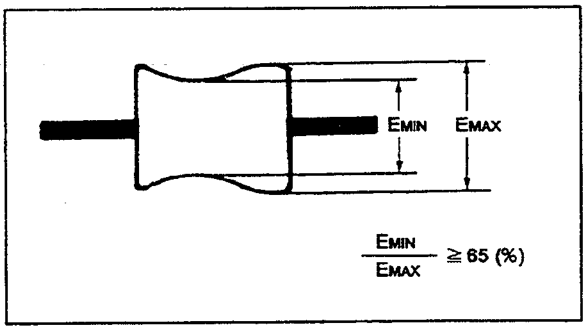
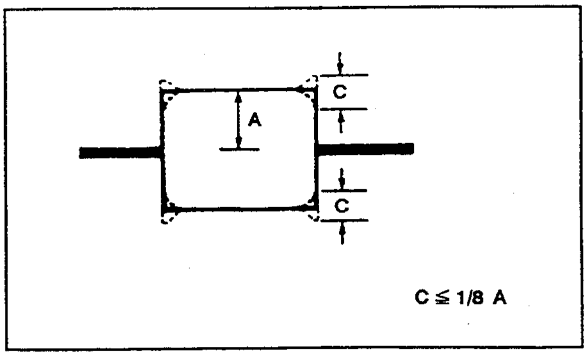


Fig. 43



$$\frac{E_{MIN}}{E_{MAX}} \geqq 65\ (\%)$$

Fig. 44



$C \leqq 1/8\ A$

Fig. 45

4-6-2. RISING CHECK (Fig. 46)

1) Play back the alignment tape for tracking adjustment.
2) Cancel the track shift mode.
3) Eject the tape, then load it again.
4) Set the playback mode and confirm that the RF wave form rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller.
5) CUE/REV and FF/REW the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds, Also confirm that the tape is not bent around the pinch roller.
6) Repeat steps 3) to 5) once more.

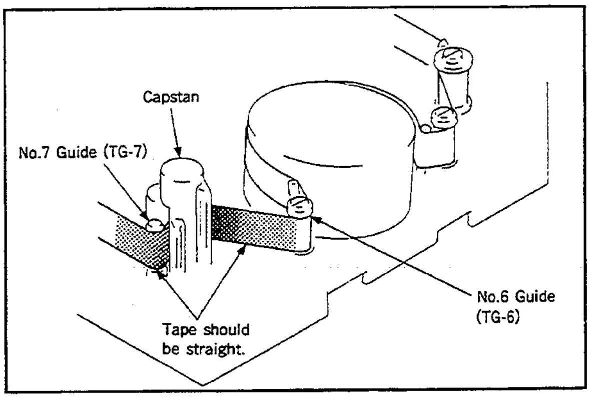

Capstan
No.7 Guide (TG-7)
No.6 Guide (TG-6)
Tape should be straight.

Fig. 46

4-6-3. TAPE PATH CHECK (Fig. 47)

1) Play back a thin tape like the P6-120MP (NTSC) or P5-90MP (PAL), etc. and confirm that no tape rising occurs, and that curling is less than 0.3mm, at the lower flange of the No. 2 guide , the upper flange of the No.3 guide, the upper flange of the No. 6 guide and the No.7 guide upper and lower flanges.
2) Confirm that no tape rising occurs and that curling is less than 0.3mm at the flange of all guide when pressing the FF button in the playback mode to set the CUE mode, or the REW button to set the REV mode.

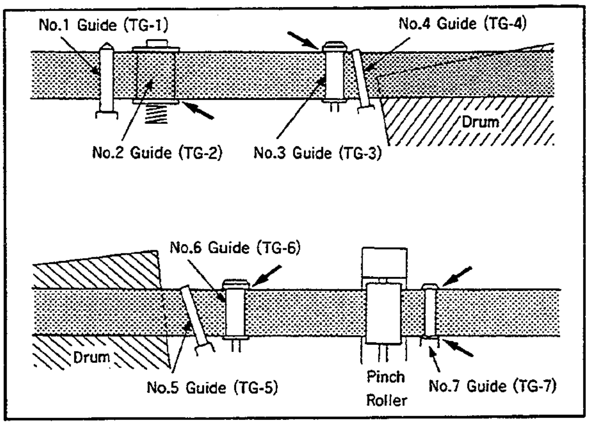

No.1 Guide (TG-1)
No.4 Guide (TG-4)
Drum
No.2 Guide (TG-2)
No.3 Guide (TG-3)
No.6 Guide (TG-6)
Drum
No.5 Guide (TG-5)
Pinch Roller
No.7 Guide (TG-7)

Fig. 47

8mm Video MECHANICAL ADJUSTMENT MANUAL IV

A MECHANISM

SUPPLIMENT-2

Video 8

〈Connection of Mode Selector IV Conversion Connector〉

In use of Mode selector IV conversion connector(J-6082-167-A), there are two different connecting methods depending on the model connected:

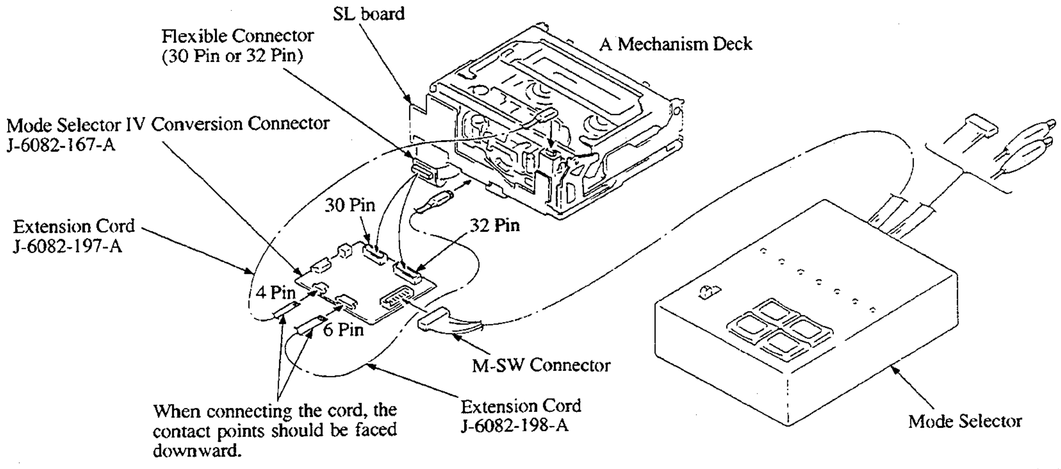
1. CCD-FX series

With the SL board mounted on mechanical deck, connect 30-pin(or 32-pin) connector to 30-pin(or 32-pin) Mode selector IV conversion connector.

CCD-FX300 series, FX400 series. FX500 series
→ 30-pin connector (FP425 or FP600)
CCD-FX700 series → 32-pin connector (FP477)

2. Models other than above

Connect the extension cord(J-6082-197-A) to loading motor 4-pin connector and extension cord (J-6082-198-A) to mode switch 6-pin connector in mechanical deck, then connect the other end of cord to 4-pin and 6-pin connectors of Mode selector IV conversion connector respectively, as shown below.


SL board
Flexible Connector
(30 Pin or 32 Pin)
A Mechanism Deck
Mode Selector IV Conversion Connector
J-6082-167-A
30 Pin
Extension Cord
J-6082-197-A
32 Pin
4 Pin
6 Pin
M-SW Connector
When connecting the cord, the contact points should be faced downward.
Extension Cord
J-6082-198-A
Mode Selector

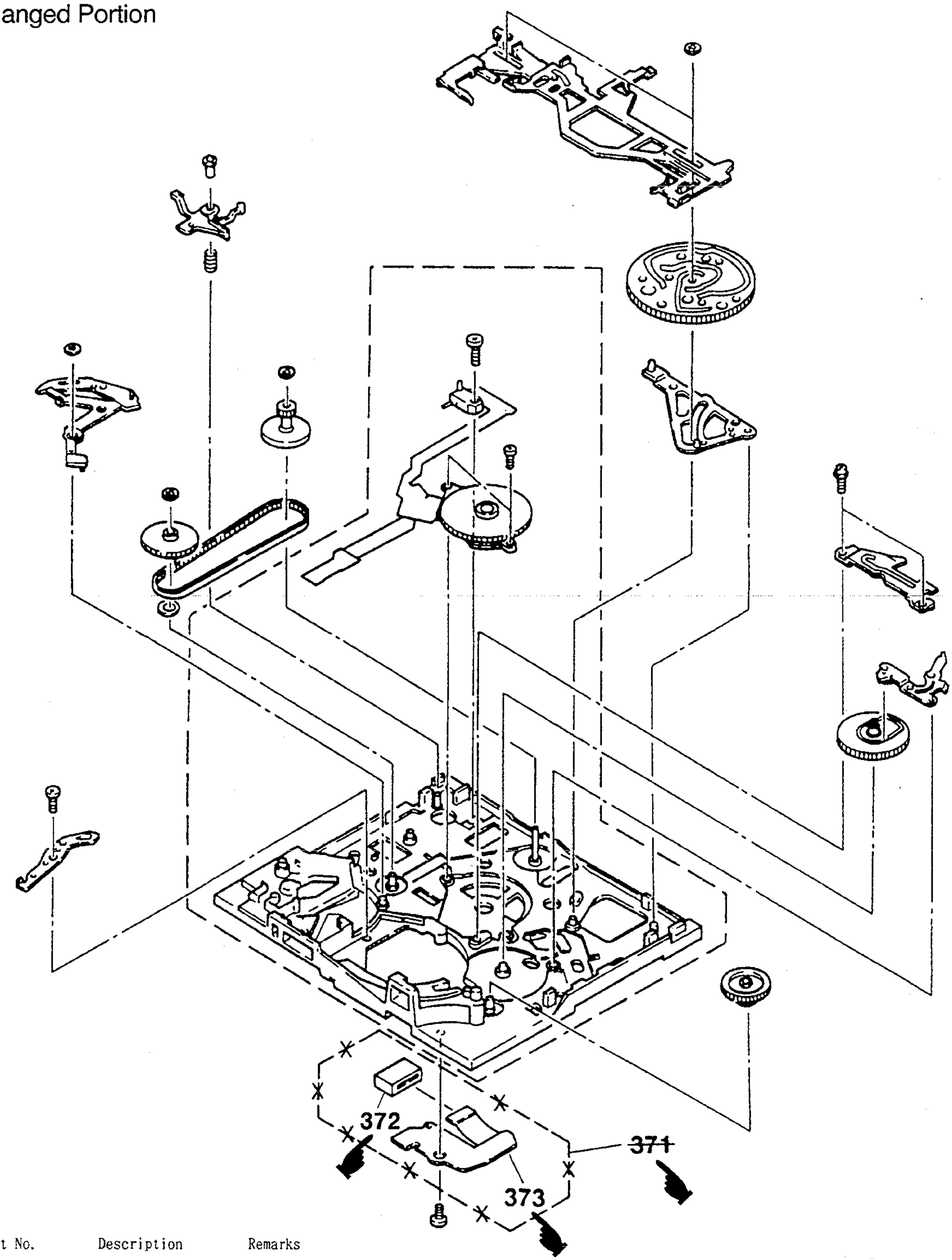
〈CORRECTION〉

P10. 2-4 Service jigs list

		Incorrect		Correct
J-15	FWD B.T adjusting driver	J-6082-182-A	➡	J-6082-187-A

MECHANISM CHASSIS ASSEMBLY (2)

☛ : Changed Portion



Ref.No.	Part No.	Description	Remarks
~~371~~	~~A-7040-311-A~~	~~FP-444 ASSY~~	☛
372	1-691-254-13	CONNECTOR, TRANSLATION 10P	☛
373	1-641-639-13	FP-442 FLEXIBLE BOARD	☛

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